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ABSTRACT

This publication contains 22 refereed research papers, 4 refereed action research and classroom application papers, and 3 research training papers from a national conference on promoting excellence in research and teaching for business. The research papers are "Analysis of Executives' Written Documents" (Jennings, Vice); "Assessment of International Students Enrolled in an Information Systems Technologies Baccalaureate Degree Program" (Evans, Sinha); "Association Between Students' Attitudes Regarding Content Areas in an Information Systems Technologies Curriculum and Their Computer Background" (Henry, Davis, Gonzenbach); "Comparing the Return Rate, Speed, and Quality of E-mail and Postal Mail Survey Delivery Methods in a Business Education Setting" (Truell, Goss); "Comparison of Computer Workforce Skills" (Vitier, Joyner); "Comparison of the Diskette Survey Responses and Paper and Pencil Survey Responses on Self-Directed Learning Instruments with Business Educators" (Bartlett, Kotrlik); "Comparison of Student Performance Outcomes" (Willis, Joyner); "Computer Applications Software Skills Students Bring to College Level Introductory Computer Classes" (McDonald); "Computer Competencies of High School Students" (Arosteguy, Bartholome); "Effect of Human Resource Training and Development Programs on Restaurant Turnover Rate" (Wen, Truell); "Employability Skills Required for 21st Century Jamaican Workers" (Anderson, Williams-Myers); "Exploring the Relationships Between Organizational Culture and Self-Learning Among Office Employees" (Bartlett, Higgins, Kovacs); "International Business Education" (Zeliff, Herbers, Meyers, Sly); "Latent Sources of Computer Self-Efficacy" (Smith-Weber);

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"Meeting the Technology Staff Needs of Elementary Teachers" (Crews, McCannon); "Most Common Grammatical Errors Made by Undergraduates as Perceived by Business Communication Professors by Years of Teaching" (McCannon, Crews); "Pacific Rim Business Students' Perceptions of Six Representative English-Language Accents" (Scott, Green, Rosewarne, Neal); "Status of Ethics Instruction in Marketing Education" (Truell); "Structure of Program of Study Where Plateaus Were Encountered in Court Reporting Skillbuilding Classes" (Sheets); "Student Attitudes Toward and Evaluation of Internet Instruction" (Truell); "Teaching Concerns of Traditionally and Alternatively Certified Marketing Educators" (Truell); "Technology and Workplace Skills Needed for Entry-Level Employment in the 21st Century Workplace" (Wiedmaier, Roberts); and "Training Needs of State Government Secretarial Employees" (Redmann). The action research and classroom application papers are "Challenges and Opportunities Associated with Internet-Based Instruction in Business Education Classrooms" (Truell); "Generating Realistic Business Data Instantly" (Chen, Wong); "Increasing Organizational Productivity through the Implementation of Virtual Teams" (Spataro, Spataro); and "Teaching Business Problem Solving with Database Management Applications" (Chen, Ray). The research training papers are "Documenting a Research Article" (Scott); "Illustrating a Research Article" (Arosteguy); and "Let's Get Serious About Conducting Action Research" (Bronner). (YLB)

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Book of Readings

1999 Delta Pi Epsilon National Conference

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PART I
REFEREED RESEARCH PAPERS

Analysis of Executives' Written Documents: Their Practices and Preferences

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Janna P. Vice
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Abstract

To identify the written communication practices and preferences of top-level executives, 150 written documents of 24 upper-level managers in a multinational company were analyzed. Through interviews focusing on writing practices and preferences, the executives identified (1) personal goals for writing effectively, (2) steps to ensure accuracy, (3) types of documents most difficult to write, and (4) the impact of writing on their current positions. The document review indicated executives' writing strengths and writing areas needing improvement.

Background of the Study

The importance of communication skills in obtaining a job is generally not disputed. A number of studies have supported the importance of such skills. For example, Curtis, Winsor, and Stephens found that communication skills were more important to applicants in obtaining entry-level positions than were their technical skills, grade point averages, or their degrees (1989). Similarly, Dowd and Liedtka found that communication skill was the most common skill sought by the majority of corporate recruiters in final-round interviews with MBAs (1994). A study by Ray, Stallard, and Hunt produced similar findings (1994). According to their study, four of the top five criteria for screening and evaluating applicants are communication skills—oral, listening, interpersonal, and written.

Once on the job, communication skills are also important. In a study of multinational companies in the Greater Kansas City area, Dirks and Buzzard noted that verbal and written communication ability was rated more important than all other characteristics for international employees (1997). Scudder found that employees who rated high in job performance also tended to have communication proficiency (1989).

In studies related to the findings of the current study, Dorn reported that business writers typically write memos and letters for the purpose of sharing and disseminating information (1999). Hynes and Bhatia in a study of currently employed graduate business students found that while the students highly valued report writing skills in relation to their jobs, they valued oral communication skills highest of all skills (1996).

Business executives consider writing to be one of their most valuable activities, and they spend a significant part of their time writing various types of communication. However, the writers' levels within the company may determine the types of documents they write and the writing problems they encounter.

A study of front-line supervisors who generally had taken no college courses revealed the following: (Mabrito, 1997)

1. Most of the communication written by these supervisors is internal.
2. The documents written most frequently to subordinates (a) detail tasks and responsibilities at the start of a project and (b) report disciplinary action.
3. The documents written most frequently to managers are memos and short reports.
4. Meeting deadlines and identifying appropriate information for a document are primary challenges faced by these supervisors

Introduction

Although students in college and university communication courses may begin their careers at low entry levels, they generally aspire to and are qualified for higher employment levels. As these graduates progress through the executive ranks, their ability to communicate becomes more important and the writing demands of their jobs may change. To ultimately become top-level executives, they must be able to meet the communication challenges expected at that top level.

Statement of the Problem and Method of Study

This study, then, analyzes approximately 150 written documents of 24 upper-level managers and their assistants in a multi-national company. The documents were evaluated on the basis of effective writing principles that are typically taught in business communication courses.

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After the documents were independently evaluated, a face-to-face interview was conducted with each of the executives. The interviews ranged from twenty to thirty minutes each. The focus of the interview was to discuss the executive's writing practices and preferences in view of the documents that had been evaluated.

The objective of the study was (a) to identify executives' opinions about their own writing and (b) to assess the executives' writing strengths and weaknesses. Specifically, answers to the following questions were sought:

1. How do executives view their approach to writing?
2. What are the writing strengths demonstrated in the executives' documents?
3. How could the executives' writing be improved?
4. What advice do executives offer to college students regarding the importance of business writing?

The Participants

The top-level executives work and were interviewed at the national headquarters office of a multi-national corporation. The company, having existed since 1866, has an operating income of $67 million and conducts business through direct ownership, partnerships, and joint ventures in 140 countries.

The executives who participated in the research held the following positions within the company: president, president of a subsidiary, assistants to CEO, senior vice president of North American products, business development manager, group marketing managers, director of brand management, vice president of technology and product development, national account managers, managers of marketing research, senior vice president, and vice president of communications. As the job titles indicate, the executives who were interviewed represent a cross section of functional positions in companies nationwide.

The Types of Documents Evaluated

The types of documents evaluated included routine memos, adjustment letters, sales letters, congratulatory letters, thank-you letters, letters of condolence, marketing research reports, a company-wide strategic plan, personnel evaluations, analytical reports, marketing proposals, and letters of recommendation.

The Number and Length of Executives' Documents

The number of documents that the executives write each week varies between two and five a day. However, when including the number of E-mail messages prepared, executives write between 50 and 100 messages per week.

The length of the executives' documents generally average a page or less to two pages. However, even a one-page report may need supporting documentation such as graphs and charts. A presentation may include 80-90 pages.

Executives' Views About Their Writing

The executives shared their views about their writing regarding (a) their personal goals for writing effectively, (b) the steps they take to ensure accuracy, (c) the types of documents they find most difficult to write, and (d) the impact their writing has had on their current positions.

Executives' Personal Goals for Writing

The writing goals of most of the executives could be summarized by the chief executive officer who said his goal was "…to communicate the message in as short an amount of time as possible and to be convincing." Other goals include prioritizing the points, having a clear call to action, and identifying the reader's next step. Being clear about the objective, telling when and how to accomplish it, is also a prevalent goal among the executives.

Steps Taken to Ensure Accuracy

The executives addressed three types of accuracy: accuracy of facts, of tone, and of mechanics. To ensure the accuracy of their facts, they check the figures, ask questions, conduct research, and run the message by the senior staff. To ensure the message has the correct tone, the executives write the document one day and lay it aside to be mailed the next day. They also ask their secretaries to proofread the message. They check for subtle wording to ensure the intended message is communicated. Executives use a number of tools, such as Spell Check and Grammatik, to ensure the accuracy of the document's mechanics. They also use dictionaries, a thesaurus, and reference books. The executives emphasized the importance of proofreading, having someone else read the document, and working from drafts.

Types of Documents Most Difficult to Write

The executives indicated that the documents most difficult to write are the "thank you" message, sympathy or condolence notes, and congratulatory messages. These were referred to by an executive as "soft documents." They are perceived to be more difficult to write because they are not business issues that have clear objectives.

Other difficult messages include contractual documents, persuasive messages, negative or emotional messages, and reports to "higher ups." Managers also find messages of a sensitive nature difficult to write. For example, if a subordinate has made a mistake, writing to explain is difficult and sensitive. Similarly, convincing management to accept a new product requires a balance between being brief and yet telling enough to make the point.

The vice president of communications listed two types of difficult messages. The first are lengthy speeches; the longer they are, the more difficult they become. Second, a position statement for the press is difficult. Every word must be thought through carefully. He believes a press statement is the most critical piece of writing the company does.

Impact of Writing on Executive's Current Position

All of the executives indicated that being a good writer had helped to advance their careers. One vice president stated, "rightly or wrongly, good writers are recognized as being smarter." While writing is a minimum requirement, one vice president believes the ability to speak to an audience is even more important.

Evaluation of Executives' Written Documents

The evaluation of the executives' documents revealed the strengths of the documents as well as the areas for suggested improvements.

Strengths of the Executives' Written Documents

The following strengths were characteristic of the executives' written documents: Messages generally

- were clear and concise.
- were well organized with a logical opening, middle, and ending.
- were written without hidden or unintended messages.
- were controlled yet were positive, friendly, and courteous.
- contained important elements of goodwill.
- clearly stated the desired action.

These characteristics are all important elements of a business writing class and reflect the standards of "good" writing.

Suggestions for Improving the Executives' Writing

The suggestions for improving the executives' writing addressed somewhat subtle writing rules that in isolation may seem somewhat insignificant. However, the executives agreed that if these principles were applied consistently among writers and documents throughout the organization, they would have a positive impact on the total quality of the company's written communications. The suggestions addressed the tone of the documents, concise wording, application of rules, and the use of outdated expressions.

Although the company placed considerable emphasis on the "team," the documents occasionally had demanding or condescending tones. For example, "You must...." and "You should...." did not convey team-building images. Alternatives are "We must...." or "We need...." Negative phrases and apologies were often used unnecessarily. In each case, they received more emphasis than the writer intended. For example, "Perhaps this information will reduce the confusion" could be revised to "I believe this information addresses the questions you raised." The words "hope" and "feel" can unintentionally convey a tone of doubt or lack of confidence.

The executives' writing generally needed to be more concise, especially in the opening and ending sentences. Because these two positions receive the greatest emphasis, they need to be tightly and strategically worded. For example, an opening that begins "I would like to thank you..." places emphasis on the "I would" rather than the "thank you." The opening "We here at XYZ...." could easily have the emphasis changed and reflect a positive image with the "The XYZ team...." The endings of the documents often repeated the openings rather than focusing on the reader's next step.

The evaluations revealed a number of punctuation practices that did not follow standard rules of practice. These practices included underlining punctuation at the end of a sentence, placing a comma between the month and the year, omitting the last comma in a series of items, and omitting commas between the city and state.

The executives' messages frequently needed more concise verb construction. For example, the overused expression "please advise" ranged in meaning from "please call to inform me" to "please make the decision."

Executives' Advice to College Students

Executives offered their advice to college students in the areas of the importance of good writing to career success and the significance of meeting deadlines.

Importance of Good Writing to Career Success

The executives believe that effective writing skills are very important to success on the job. They emphasized that with the computer and E-mail, writing skills have become even more critical for success. A general theme among the executives was that good writing usually reflects the person's organizational skills. If the writing is organized, the person's work generally is organized too. If people make a negative impression with their writing, they are fighting an "up-hill" battle. As one executive noted, fewer people are at the top of an organization because the climb is a "weeding out" process. One poorly written document or presentation can close the door of opportunity.

Significance of Meeting Deadlines

The executives' consensus regarding the significance of meeting deadlines is "If you don't meet the deadline, don't send the document." Failure to meet deadlines hurts one's credibility. It is even an offense that resulted in dismissal of employees. Supervisors and peers judge someone on how prompt he/she is, especially if they do not know the person well. The chief executive officer replied that employees must meet deadlines. If a document is late, no one will read it. The team is going to "go on down the road."

A number of executives indicated that if on occasion a person cannot meet a deadline, he/she should notify the supervisor and tell why the deadline will not be met. According to the executive, "If it is a good reason, I understand. If not, I don't want to hear it."

Implications for Classroom Instruction

This research has what we believe are very important implications for classroom instruction. These implications include the following:

1. The findings reinforce the relevance of the effective writing principles taught in business communications classes for potential entry-level employees.
2. The findings also reinforce the relevance of the types of documents included in business communications and report writing courses. The findings also suggest that additional emphasis be given to "soft" documents such as personal notes of thanks, sympathy, and congratulations.
3. The findings indicate that assignments for which students write short documents, one and two pages, are realistic.
4. The findings highlight a number of subtle writing techniques that distinguish amateur or novice writers from professional writers.
5. Students should recognize that writing effectively is critical to job success. Written documents often highlight other important skills such as organizational ability, critical thinking, and the ability to meet deadlines.

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Assessment of International Students Enrolled in an Information Systems Technologies Baccalaureate Degree Program

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Abstract

Since demographic trends suggest educational institutions in the United States will continue to enroll record numbers of international students, business educators and administrators need to fully understand this student population. This qualitative study was undertaken to assess international undergraduate students enrolled in an Information Systems Technologies program at a Midwestern University. This study provides demographics of students from seven countries, information regarding their perceptions of their program of study, career goals, and barriers encountered while pursuing an education in the US.

Introduction

The nature of work and jobs is changing dramatically. The economy of our country is no longer centered on manufacturing; instead it is information based (NBEA, 1997). The occupational and professional development components of business education are also changing to reflect the emerging trends in business. Carlock (1991, p. 3) indicates that "Now, more than ever, international students are attending American educational institutions and exchange programs of students, teachers, and individuals are being encouraged." According to the study Open Doors, 1997-98 by the Institute for International Education, there was a 5.1 percent increase in international student enrollments for the 1997-1998 school year. This increase brought the international student enrollment to a total of 481,280 (cited in Honan, 1998).

According to Ubadigbo (1997) and Gregory (1997), demographic trends suggest colleges and universities will be enrolling record numbers of international students. These enrollments will have far reaching implications for world education and international development. Research has identified "culture shock" as one of the difficulties that international students face when studying in another country. Colleges and universities which enroll international students need to concern themselves with the "culture shock" associated with the change in cultural environment international students face and work on dealing with adjustment areas identified as most difficult for those students (Tompson & Tompson, 1996).

Purpose of the Study

The purpose of this study is to contribute to the literature on international education and to provide business educators and administrators with a better understanding of international students.

Statement of the Problem

The researchers determined that an assessment needed to be done regarding the international undergraduate population in the college of a Midwestern University in which both are employed. No specific information was available within the college to determine the number of international students enrolled, demographics regarding these students, previous educational backgrounds, specific information related to their perceptions of the university and the college program in which they were enrolled, their future career goals, and their perceptions of social and cultural barriers. The researchers were interested in gathering information related to all of the 60 students enrolled in the college; however, for this study specifics regarding students enrolled in the Information Systems Technologies program of the college will be presented. Answers to the following research questions were sought for this study:

1. What are the demographic characteristics of IST international students enrolled in the college?
2. What are the perceptions of the IST international students regarding their American program of study?
3. What are the career goals of IST international students?
4. What are some of the perceived social and cultural barriers and adjustments that IST international students encounter while pursuing an education in the United States?

Methodology/Procedures

In spring 1999, the researchers decided to conduct a study of the international students enrolled in the College of Applied Sciences and Arts. Students' names and majors were retrieved from the university-wide Student Information System in order to determine the number of international students. An analysis indicated that 23 percent of the college's total international population of 60 students had chosen Information Systems Technologies, a four-year Bachelor's degree, as their program of study. This 23 percent represented 14 students from eight different countries.

Because students' perceptions and interests as well as demographic data were essential to the study, the researchers decided to use a triangulation approach to the study. The researchers also wanted the data "... to be close descriptions of things someone actually said or did." (Patton, p. 393)

Demographics and information related to social and cultural barriers were acquired by using a survey, and an interview process was used to gather other information (Tuckman, 1988). After a review of the literature, it was determined that no survey instrument was available which would produce information specifically related to the IST program in which these students were enrolled. Therefore, the researchers developed an instrument. The instrument was reviewed by three experts; one was a faculty member who had taught university students in Asia, one was an international staff member located in the college, and one was a staff member affiliated with International Programs on campus. The instrument was pilot tested with three international students. All individuals were to complete a check sheet that asked the following: (1) Do the questions measure the overall purpose of the study? (2) Are the questions clear? (3) Are the questions concise? and (4) General comments/suggestions. As a result of the review and pilot test, the instrument was modified to reflect changes suggested by these six individuals.

Because human subjects were involved in the study, an application requesting permission to complete the study was submitted to the university's Human Subjects Committee for approval. Since the IST students (14 total) were not only to complete a survey but be interviewed, it was essential that they be contacted individually to determine their willingness to participate in the study. All students were contacted by e-mail and phone and asked to make an appointment to see one of the researchers. During that appointment, the purpose of the study was explained, a consent form was signed, and an appointment for an interview made (Tuckman, 1988). Out of 14 individuals, all consented to participate in the study; however, only 12 individuals were interviewed. One graduated and left the country before the interview occurred, and another did not schedule an appointment for the interview.

Both researchers participated in the interview process. At the beginning of the interview, the respondent was asked to complete a survey which included demographic questions and questions related to the barriers encountered by the respondent upon his/her arrival in the United States and his/her arrival at the university. After the respondent completed the survey information, the interview began. One researcher asked the questions while the other assisted in recording responses and asked for verification of responses when needed. In addition to manual recording of responses, the interviews were tape recorded. After interviews were completed, they were transcribed verbatim. An analysis of the data was undertaken to identify significant statements and thematic descriptions. As themes emerged from the data, they were categorized according to the appropriate research questions. In this study, demographics from the survey are presented in narrative and table format and qualitative research findings of the interview data are presented in narrative form integrating direct quotes. These quotations are being used to not only preserve the language of the respondents but also to provide verification that the data produced the themes or ideas reported.

Findings

Research question 1: What are the demographic characteristics of IST international students enrolled in the college?

The twelve students interviewed were all single, from seven countries, and between the ages of 21-29. More female (7) than male (5) students were enrolled in the program. The majority (83%) of the respondents were from Asia; one from Central America; and one from Europe. Table 1 presents specific demographic data of the interviewees.

Six (50%) of the interviewees spoke three languages. Eleven (92%) spoke English before arriving in the U.S. In addition to English, some of the other languages spoken were Cantonese, Chinese, Creole, French, Greek, Japanese, Malay, Mandarin, Spanish, and Taiwanese. Of the twelve interviewees, four spoke Chinese as a first language.

Research question 2: What are the perceptions of the IST international students regarding their American program of study?

Study Abroad

Three students indicated that they chose to study abroad because they did not pass the entrance examination they took in their country in order to be admitted to a university there. Two students indicated they wanted to improve their English language skill. One indicated, "In my culture, they think it is prestigious to go away to study. "

Four indicated that they chose to come to the U.S. because they had friends and relatives in the U.S. Others indicated that they were referred by some agent or organization in their respective countries. One indicated that it was her "dream" to come to the United States. "America is a big country with many type of people living in America." She also stated her belief that it is common to see nontraditional students in the U.S. One reason they decided to study in the U.S. was because the latest technology is available. Students who had attended SIUC's campus in Nakajo, Japan, indicated that it was easy to transfer credits to SIUC. Some indicated that they wanted to experience life and education in America and wanted to learn about American culture.

Table 1
Demographics of IST International Students

Demographics n=12		Percentages
Geographic Region		
Asia	10	83.0
Europe	1	8.5
Central America	1	8.5
Country of Origin		
Cyprus	1	8
Honduras	1	8
Hong Kong	2	17
Japan	3	25
Malaysia	2	17
Mauritius	1	8
Taiwan	2	17
Gender		
Male	5	42
Female	7	58
Marital Status		
Single	12	100
Age		
21-24	7	58
25-29	5	42
First Language		
Chinese	4	33
Japanese	3	25
Cantonese	2	17
French	1	8
Greek	1	8
Spanish	1	8

IST Major

The group of international students who participated in the study transferred from majors in computer science, business, liberal arts, or undecided before declaring IST as a major. Students identified several reasons as to why they chose IST as their major. They perceive IST as a marketable program of study in their pursuit of finding a job.

One student explained the reason why he switched from Computer Science to IST as, "They say it is combination of computer science and business. Actually, Computer Science is more concentrated. IST is somehow balanced in business, also management. So I decided to switch. I found Computer Science kind of difficult." Several students transferred from Computer Science to IST because they did not want to complete required math and science courses.

Students made positive comments about the technical, management, and presentation skills that are taught in the IST program. The IST program offers various courses that will provide skills for finding a job. "They prepare you for business or job with management type of courses. Giving presentations in class will be useful to me in communicating." Some of the skills the international students identified as marketable were communication/presentation skills, information management, networking, programming, software skills, and systems analysis.

Students indicated that they liked faculty and staff in the IST programs. They were impressed by the fact that faculty knew all students by name, and they enjoyed the open relationships that American instructors and students have. One student indicated that faculty are knowledgeable but oftentimes did not know how to transmit information to international students.

Students enjoy having access to up-to-date equipment that is available in the IST program. Some felt that a few of the courses taught in the IST program are duplicative and redundant. Students did not like the fact that they had to buy some of the software; they believed it should be provided to students at no cost.

Differences in the Educational System

IST international students identified several areas in the U.S. educational system which are different from their home country's educational system. Most students indicated they enjoy the flexibility they have in the U.S. in terms of course scheduling and choosing instructors. Students indicated that textbooks are too expensive in the United States—many of their countries provide textbooks. Students also indicated that the U.S. educational system is not as stressful. There are fewer rules here. One student indicated, "Generally, it is said that in the U.S., it is easy to enter the university, but hard to graduate." The researchers grouped other interviewees' responses into the following: courses, tests, grading, student-teacher relationship, and classroom environment.

Courses, Tests, and Grades

A student from Taiwan indicated, "In my opinion, mathematics in university here is like the same level as high school back home. . . Math 108 is like what I learned in middle school, like 7th grade." Students found tests are easier here. In their home country, standardized tests are administered to all students. Mostly they are essay questions. Students do not have the opportunity for make up tests. Some countries have different grading systems. Grades are awarded in terms of scores, and students are ranked according to the scores.

Student-Teacher Relationship

Responses that related to the relationship students and teachers have revealed that teachers are friendly, and they care about students. However, several interviewees mentioned that teachers in their home countries receive more respect from students than teachers in the U.S receive. One Asian student made the comment, "In our culture, teachers are just like parent. We have to give very high respect to them." Another student stated, "Teachers here don't get the same respect as compared to back home." Students in the U.S. talk and interrupt in the classroom. The Asian students suggested that they are quiet in the classroom to show respect to their teachers. Students did suggest they like having the opportunity to ask questions in the classroom.

Interviewees revealed that teachers in their country do not communicate with students via e-mail or give out their home phone numbers. "Here the relationship is more open" one student said. "Student here is different. They just ask questions. . .In my country the teacher just speaks, speaks, speaks for two hours, finish, and we go home. If I do have a question, maybe ask him or her at the end of the class. [In the U.S.] the students keep talking, discussing, sometime make jokes during class. In my country, no jokes; everything is silent."

Environment

Students enjoy the learning environment here in the U.S. The SIUC campus, buildings, and classrooms make students feel more comfortable than they feel on campuses in their home countries. They enjoy having access to the most up-to-date equipment and technology that is available.

Research Question 3: What are the career goals of IST international students?

Out of the 12 interviewees, four (33%) indicated they would like to find a job and stay in the U.S.; three (25%) indicated they would like to stay in the U.S. for a while to gain experience but eventually would like to return to their home country; and five (42%) indicated they would return to their home country after graduation.

Students who indicated that they would like to return to their home country after graduation would like to work in areas that support improving technology in their country. Some would like to work for a bank, insurance company, or for the government. Two students indicated that they would like to start a small company or a consulting firm. The majority of these students indicated that their English skills and presentation skills would help them to obtain a good job in their country. One student specifically stated that "There are lots of U.S. companies in Taiwan. To speak English is very important, very useful."

Students who would like to stay in the U.S. aspire to find employment in the areas of systems analysis, programming, networking, technical areas, or some type of management position.

Research Question 4: What are some of the perceived social and cultural barriers and adjustments that IST international students encounter while pursuing an education in the United States?

These international students experienced culture shock and encountered several problems upon their arrival in the U.S. Some of the problems identified by the students interviewed were: communication, language, cultural differences, housing, transportation, and isolation. Safety was a concern for some students. One mentioned, "The Midwest has more safety than the East coast." Another student indicated that the reason he chose SIUC was because it has good programs, less crime."

Culture Shock

It was quite evident that these students experienced a cultural shock upon their arrival in the U.S. Interviewees indicated they were picked up at the airport by some stranger(s) who was/were culturally different from them. Frequently they did not have preplanned lodging arrangements; they had language/communication problems; and they had to learn how to get around in a community and campus with which they were not familiar.

Language/Communication Problem

Several students indicated that language/communication causes major problems for international students who are studying in the U.S. One student said, "The big problem is the language." Another stated, "I feel uncomfortable to talk with some people because my English is not so good. I wanted somebody to talk to me."

Students find communication the first semester to be very difficult. They have problems understanding their instructors and other students. One Asian interviewee said, "Sometimes I have questions, but I cannot ask because I cannot explain how to say. . .I try, but I'm scared. . . because I worry about the instructor saying, 'What? What?'. . .I feel very uncomfortable. It means they don't understand what I mean, and I need to explain more. The language is a problem for international student. . .I can spell something but I don't know how to pronounce. So maybe sometimes we can. . .write on paper."

Social/Cultural Differences

Some of these students arrived in the U.S. with anxiety and fear. "I was really scared when I first came here, because I was going to live in the dorm, and what an image we have about American girls. They're very open; they're very liberated; and they can do whatever they want. That's not coming from my culture. So I was really scared, because like, you know, I didn't know what to expect. . .I talk to some people, and some I don't. . .and I've found people, that think, oh, international students are stupid."

International students would like to learn more about American people and American culture. "If they have more, like, smaller classes and more interaction with American students and international students, it would be easier to make friends," one interviewee stated. But some preferred making friends with other international students because "They share same cultural backgrounds, so when I talk to them I feel like we are from same type of background." One student shared, "The first person I met [from my country] showed me around the town and the campus. He knew where to eat, what to eat. It was easier to have somebody from the same country, someone with similar customs, from my culture." Another student said, " I think it's easier still to meet like international students in class, you relate better to them rather than like to Americans. In my classes it seems like all internationals hang out together, and the Americans hang out together."

"I think here, students are more open. . .seems like we can say anything." One student indicated that "Some international students think American students drink a lot and party too much. Young guys can't control themselves when they are drinking and driving. I like party, but not every week." A student from Taiwan said, "In Taiwan, we don't really have drinking age. You can drink any age. Nobody care. I think people here drink more; they drink a lot."

Housing

Upon arrival, housing was a problem for international students interviewed. One female student said, "Housing was a problem. I did not have any house to live in when I got here." Most of these students were picked up at the airport by some unknown person and were taken either to temporary housing or a motel. One student said, ". . .I was completely. . ., like scared, because. . . that was my first time in the U.S., first time in Carbondale." Another student stated, "It would be nice to have help finding a place to sleep."

Transportation

Transportation is a big problem for these international students. Students depend on someone else to take them to the grocery store or bank. "I don't have car and then don't want to take the bus everyday."

Discussion and Implications

With the influx of international students in the United States, it is important to understand their cultural background and recognize difficulties they encounter while trying to further their education in a foreign country. They experience culture shock and go through an adjustment period while trying to overcome these difficulties. International students can be a tremendous resource since they bring different perspectives and experiences into the classroom (Coleman, 1997). Understanding and appreciating the global environment and cultural diversity are the key ingredients to an international education. Business educators should embrace the Business Teacher Education Curriculum Guide and Program Standards to foster diversity and be sensitive to multiculturalism.

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Association Between Students' Attitudes Regarding Content Areas in an Information Systems Technologies Curriculum and Their Computer Background

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Abstract

Perceptions of students were identified regarding the importance of content areas to be included in a baccalaureate program in information systems technologies. Specifically, this study attempted to identify an association between students' attitudes regarding the importance of the content areas and their previous computer academic and non-academic background. An association was found between the primary source of computer academic course work and the students' attitudes toward the content areas of telecommunications, networks, operating systems, integrated information systems, and systems analysis and design. There was no association between the students' attitudes and their non-academic source of computer training.

Introduction

Educating future information systems professionals is a challenge faced by educators in departments such as Information Management Systems, Computer Information Systems, and Management Information Systems. Employers demand that graduates today have technical and non-technical areas of expertise in order to be successful on the job. "A dynamic business environment coupled with a rapidly evolving IT environment dictate up-to-date curriculums that offer courses in state-of-the-art technology. As a consequence, lengthy curriculum change cycles are unacceptable and impose the risk of graduating students whose potential for success in business may be greatly diminished" (Maier & Gambill, 1997). The goal of all computer-related programs of study is to remain abreast of the many changes, challenges, and trends occurring in the information technology environment and to offer a curriculum which encompasses the requirements of the current workforce.

Along with the challenge to continually update curricula there is also a general concern for preparing enough graduates for the workplace. "Recently, the demand for information technology (IT) workers has outstripped supply in many areas. High-tech businesses warn that this imbalance, if not corrected quickly, could hold back economic growth" (Sharp, 1998). "As recruiters swarm campuses seeking skilled graduates, industry is pushing schools to adopt new curriculums based on distributed architectures and client-server computing and urging them to add courses in business communications and teamwork skills. But industry also demands that schools not eliminate any of the old standbys such as COBOL and mainframe fundamentals" (Goff, 1997). This presents a major dilemma for educators in all computer-related disciplines.

Purpose of the Study

With only four years to cover everything required in an information technologies (IT) curriculum, schools are forced to make trade-offs that may or may not satisfy the demand necessary in the workplace. While students favor classes that are either hands-on or cover hot topics such as web-based design, Java programming, networking, and multimedia, it is ultimately the responsibility of university faculty to provide students with a well-rounded curriculum of lifetime skills to adapt to the rapidly changing world of information systems.

In an attempt to identify the perceptions of students with an Information Systems Technologies major regarding the importance of 25 content areas to be included in the curriculum, the researchers found that the majority of the students felt the eight content areas of programming languages, networks, operating systems, database software, troubleshooting, systems analysis and design, word processing software, and spreadsheet software were "extremely important" (Davis, Gonzenbach, & Henry, 1998). Therefore, the purpose of this aspect of the study was to identify whether the computer background of the students was associated with their perceptions of the importance of the 25 content areas.

Research Questions

1. Is there a significant association between students' attitudes regarding the importance of specific content areas in an information systems technologies curriculum and whether the majority of their previous computer academic course work (primary source) was completed at the high school, post secondary, both, or neither level?

2. Is there a significant association between students' attitudes regarding the importance of specific content areas in an information systems technologies curriculum and whether their non-academic sources of computer training were primarily obtained from workshops/seminars/conferences, on-the-job training, self-instruction, or combinations thereof?

Research Methods

A survey instrument was designed and administered to 116 students with a primary major of Information Systems Technologies at a midwestern university. The survey instrument contained a demographic section, a section on content areas to be included in an Information Systems Technologies' curriculum, and a section for ranking skill and knowledge areas in the curriculum. Ninety-three students returned the survey for a response rate of 80%. The responses for the survey were coded onto a computer sheet for optical scanning, and analyses were completed using the Statistical Analysis System, Version 6.07.

Findings and Results

Demographics

Age and gender. The 20-23 year old age range was the largest number of respondents representing 48%. Twelve percent indicated they were less than 20 years old; 20% were 24 to 30; 13% were in the age range of 31 to 40; and 7% indicated they were over 40 years of age. There were 53% female respondents and 47% male respondents.

Ethnic background. Sixty-five percent of the students indicated they were white; 24% indicated they were black; 8% were Asian; 2% were Hispanic, and 1% marked the "other" option.

Educational background. Respondents were asked to mark all answers that applied to their educational background. The surveys were coded with the highest level of educational background. Ninety-three percent of the students indicated they had a high school diploma, and 7% indicated they had a GED. From the additional responses, findings indicated that 52% had some college credits; 31% had an associate's degree; 4% had a bachelor's degree, and 1% indicated some graduate work.

Enrollment status. Over half the respondents (57%) indicated they were continuing students within the university who had changed their major to Information Systems Technologies. Transfer students were the next highest number at 32%, reentry students represented 8%, and only 3% were new freshmen. When asked whether they were full time (12 credit hours or more) or part-time (less than 12 credit hours) students, 87% marked full time.

Class standing. The class breakdown was almost equal between juniors (34%) and seniors (33%). Only 4% were freshmen, and the remaining 28% were sophomores.

Importance of Content Areas in the Curriculum

The first stage of the research study identified the perceptions of students with regard to content areas to be included within an Information Systems Technologies curriculum. Students were asked to indicate the level of importance they felt should be placed on 25 specific content areas. They responded by selecting a number between 1 and 5, with 1 being not important, 2 being somewhat important, 3 being important, 4 being very important, and 5 being extremely important. Thirteen courses were selected by the largest number of respondents as being extremely important. Those content areas were programming language(s), operating systems, networks, troubleshooting, database software, systems analysis and design, word processing software, spreadsheet software, information security, disaster prevention/recovery systems, integrated information systems, groupware software and workgroup computing, and telecommunications. Table 1 indicates the importance the students felt should be placed on each of the content areas (Davis, et al., 1998).

Research Question No. 1

The first research question was: Is there a significant association between students' attitudes regarding the importance of specific content areas in an information systems technologies curriculum and whether the majority of their previous computer academic course work (primary source) was completed at the high school, post secondary, both, or neither level?

The primary academic source of computer content was determined by assessing the level the highest number of computer courses were completed by the respondent—high school level, post secondary level, equal number at both levels, or no courses at all. Computer courses were defined as those courses having a primary emphasis on computer content such as computer literacy, concepts, applications, or programming. The range was from zero courses to four or more courses.

As shown in Table 2, the largest number of students (62%) indicated they received their primary academic course work at the post secondary level, and only 7 % of the students indicated they had no computer-related courses at any level. Forty-two percent of the students responded that they had at least four computer-related courses at their high school and/or post secondary institution prior to enrolling in the Information Systems Technology major.

A chi square test of association, which is a special case of the Pearson Product Moment Correlation to be used with categorical variables, was used. Data were analyzed for statistical significance using an alpha level of 0.05. A Fisher's probability was calculated for the actual chi square distribution appropriate for this data given the fact that over 20% of the cells had expected frequencies less than five. For the areas where significance was found, a standardized residual (Hinkle, Wiersman, & Jurs, 1988) was computed. A standardized residual with an absolute value greater than 2.00 indicated a major contribution by that cell to the overall chi square value.

Table 1
Students' Responses Regarding The Importance Of Content Areas To Be Included In The Curriculum

Content Areas	Not Important	Somewhat Important	Important	Very Important	Extremely Important	n
Accounting	11	30	37	11	4	93
Business Communications	1	4	25	34	28	92
Business Law	5	20	36	23	9	93
Data Modeling	1	10	24	26	19	80
Database Software	0	5	14	21	53	93
Decision Support Systems	1	11	21	32	19	84
Disaster Prevention/Recovery Systems	2	1	22	22	42	89
Encryption	2	8	19	24	23	76
General Principles of Management	3	8	30	27	24	92
Groupware Software and Workgroup Computing	2	7	17	31	36	93
Hardware and Software Capital Expense Budgeting	1	8	33	29	17	88
Information Security	0	2	17	29	42	90
Integrated Information Systems	0	2	15	31	38	86
Networks (LANs and WANs)	1	3	7	22	55	88
Operating Systems	0	1	9	24	55	89
Programming Language(s)	0	3	7	20	62	92
Project Management Methodology and Software	0	3	13	39	30	85
Quality Assurance	2	9	29	23	18	81
Records Information Management	2	9	28	30	23	92
Spreadsheet Software	2	5	12	24	50	93
Statistics	9	30	35	12	4	90
Systems Analysis and Design	0	5	9	25	52	91
Telecommunications	0	10	18	28	35	91
Troubleshooting	1	2	11	24	53	91
Word Processing Software	3	4	14	20	52	93

Table 2
Percent of Students Receiving Computer-Related Course Work From Academic Sources

	Number of Courses					
Academic Source	**0**	**1**	**2**	**3**	**≥4**	**Total**
High School		4	8	0	6	**18**
Post Secondary		10	10	10	32	**62**
Equal Number at Both		5	1	4	4	**14**
None	7					7
Total	7	19	19	14	42	101*

*Numbers do not sum to 100 due to rounding

Table 3 shows the chi square and Fisher's probability of students' attitudes of importance for each of the 25 content areas in association with the primary source of students' academic computer-related course work. An association between the primary academic source and the students' attitudes was found in the areas of telecommunications, networks, operating systems, integrated information systems, and systems analysis and design. Further analysis was conducted to determine the standardized residual for each of these associations.

An association was found between the primary academic source of computer course work and the students' attitudes toward the content area of telecommunications. The respondents for whom high school was the primary source of computer academic course work were significantly less likely to rate telecommunications as being extremely important (Standardized Residual = -2.2).

There was an association between the primary academic source and the students' attitudes toward networks (LANs and WANs). The respondents for whom high school was their primary source of computer academic course work were significantly more likely to rate networks as being not important (Standardized Residual = 1.9; due to extremely low expected frequencies among neighboring cells, some standardized residuals are underestimated).

Another association was found between the primary academic source of computer content and the students' attitudes toward operating systems. The respondents who took an equal number of computer-related courses at the high school and post secondary levels were more likely to rate operating systems as somewhat important (Standardized Residual = 2.5) while those respondents who had no high school or post secondary computer content courses were more likely to rate operating systems as important (Standardized Residual = 2.7).

Integrated information systems was another content area where a relationship existed between the primary academic source of computer content and the students' attitudes. The respondents who took an equal number of high school and post secondary courses related to computer content were more likely to rate integrated information systems as somewhat important (Standardized Residual = 3.4). In addition, those respondents who had no high school or post secondary computer content courses were more likely to rate integrated information systems as important (Standardized Residual = 2.5).

The last content area where a relationship existed was systems analysis and design. The respondents who took an equal number of high school and post secondary courses related to computer content were more likely to rate systems analysis and design as somewhat important (Standardized Residual = 2.9).

Research Question 2

The second research question was: Is there a significant association between student attitudes regarding the importance of specific content areas in an information systems technologies curriculum and whether their non-academic sources of computer training were primarily completed as workshops/seminars/conferences, on-the-job training, self-instruction, or combinations thereof?

The primary non-academic source of computer-related training was based on the categories of workshops/seminars/conferences, on-the-job training, self-taught training (working independently by referring to manuals and/or books), and various combinations of these. The respondents were asked to list the approximate number of hours they spent in computer-related training or learning computer functions in a given year. The range of hours was from zero to more than 40 hours. Self-taught training was the non-academic primary source of computer-related training marked by the largest number of students (58%). The majority of the respondents indicated they spent over 40 hours of training in a given year (56%) as noted in Table 4.

The chi square test of association was used to determine if there were any significant associations between student attitudes regarding the importance of specific content areas in an information systems technologies curriculum and their non-academic sources of computer training. Results showed there were no significant associations as evidenced by Table 5.

Conclusions and Recommendations

Based on the findings of the study, the following conclusions were made:

1. The majority of the respondents received their computer academic course work at the post secondary level.
2. There was an association between the primary source of computer academic course work of the students and the students' attitudes toward the importance of telecommunications, networks, operating systems, integrated information systems, and systems analysis and design.
3. The self-taught method was the primary non-academic source of computer-related training.
4. The students' non-academic sources of computer training were not associated with the students' attitudes regarding the importance of specific content areas.

The following recommendations were made with regard to the research study:

1. Since prior academic computer-related course work influenced students' perceptions of the importance of various content areas, it is important that secondary and post secondary educators emphasize advanced computer content areas such as telecommunications, networks, operating systems, and integrated information systems.

Table 3
Measures of Association Between Primary Source of Academic Course Work and Students' Attitudes Regarding the Importance of Specific Content Areas

Content Area	Chi Sq.	Fisher's p	n
Accounting	11.664	0.508	93
Business Communications	9.359	0.549	93
Business Law	11.271	0.593	93
Data Modeling	14.649	0.202	80
Database Software	5.111	0.921	93
Decision Support Software	7.207	0.735	84
Disaster Prevention/Recovery Systems	9.975	0.762	89
Encryption	13.228	0.345	76
General Principles of Management	16.498	0.064	92
Groupware Software and Workgroup Computing	18.199	0.067	93
Hardware and Software Capital Expense Budgeting	11.248	0.432	88
Information Security	9.163	0.333	90
Integrated Information Systems	**27.376**	**0.00954**	**86**
Networks (LANs and WANs)	**16.964**	**0.042**	**88**
Operating Systems	**25.353**	**0.00216**	**89**
Programming Languages(s)	11.841	0.190	92
Project Management Methodology and Software	15.728	0.458	85
Quality Assurance	6.508	0.864	81
Records Information Management	10.482	0.425	92
Spreadsheet Software	8.452	0.843	93
Statistics	7.707	0.929	90
Systems Analysis and Design	**23.987**	**0.00387**	**91**
Telecommunications	**15.421**	**0.018**	**91**
Troubleshooting	12.642	0.357	91
Word Processing Software	5.964	0.967	93

Note. df = 16, p <.05.

Table 4
Percent of Students Receiving Computer-Related Training Completed from Non-Academic Sources

		Highest Number of Hours					
Non-Academic Source	**None**	**10 hours or less**	**11-20 hours**	**21-30 hours**	**31-40 hours**	**Over 40 hours**	**Total**
Workshops/Seminars/Conferences		1	1				**2**
On-the-job Training			2			6	**8**
Self-Taught		8	6	4	8	32	**58**
Workshops/Seminars/Conferences and Self-Taught						6	**6**
On-the-job Training and Self-Taught		2		1		11	**14**
All Three Areas		4			1	1	**6**
None	3						**3**
Total	**3**	**15**	**9**	**5**	**9**	**56**	**97***

* Numbers do not sum to 100 due to rounding

Table 5
Measures of Association Between Non-Academic Sources of Computer Training and Students' Attitudes Regarding the Importance of Specific Content Areas

Courses	Chi Sq.	Fisher's p	n
Accounting	20.620	.844	93
Business Communications	13.526	.816	92
Business Law	33.015	*	93
Data Modeling	23.285	.313	80
Database Software	21.683	.086	93
Decision Support Software	23.628	.366	84
Disaster Prevention/Recovery Systems	13.681	.855	89
Encryption	22.603	.281	76
General Principles of Management	25.493	*	92
Groupware Software and Workgroup Computing	30.672	*	93
Hardware and Software Capital Expense Budgeting	17.168	.758	88
Information Security	9.781	.819	90
Integrated Information Systems	9.347	.874	86
Networks (LANs and WANs)	30.331	.118	88
Operating Systems	19.944	.498	89
Programming Languages(s)	16.339	.528	92
Project Management Methodology and Software	19.728	.625	93
Quality Assurance	21.201	.588	81
Records Information Management	35.704	*	92
Spreadsheet Software	24.512	.373	93
Statistics	46.641	*	90
Systems Analysis and Design	16.655	.301	91
Telecommunications	27.443	.187	91
Troubleshooting	31.455	.102	91
Word Processing Software	24.431	.426	93

Note. df = 16, $P < .05$.
*Iterations failed to converge.

2. To continue to enhance curriculum development, a follow-up study needs to be conducted to determine the students' perceptions of the importance of various content areas after completion of the baccalaureate degree and after obtaining some experience in the field.

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Comparing the Return Rate, Speed, and Quality of E-mail and Postal Mail Survey Delivery Methods in a Business Education Setting

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Abstract

This study was conducted to explore the feasibility of e-mail as a survey delivery method by examining the response rate, response speed, and response quality of e-mail and postal mail surveys in a business education setting. Results of the study indicate that postal mail surveys achieved a higher rate of return than did e-mail surveys; e-mail surveys provided a significantly faster response speed than did postal mail surveys; and response quality was comparable for the two methods of survey delivery—e-mail and postal mail. Which survey delivery method is most appropriate for use in a business education setting depends on the perceived importance of situation-specific factors such as the speed and rate of return desired by the researcher.

Introduction

The notion of collecting research data via surveys is not new; in fact, the use of surveys to collect research data can be traced back to early Egyptian civilizations. In ancient Egyptian civilizations, leaders often times collected empirical data about their followers (Babbie, 1973). As the years have passed, survey methods have evolved to take a variety of forms including face-to-face interviews as well as mail and telephone surveys. Each of these data collection methods offers a unique set of opportunities and limitations (Dillman, 1978). An innovative and evolving form of survey delivery is that of e-mail. As with any data collection method, the e-mail survey delivery method must be carefully evaluated to determine its feasibility for use in given settings before being widely adapted.

Several writers have outlined the strengths and weaknesses of e-mail as a survey delivery method (e.g., Oppermann, 1995; Thach, 1995; Truell, 1997). Among the most commonly noted strengths of e-mail as a survey delivery method are delivery/response speed, lower costs, worldwide geographic coverage, favorable response rates, ease of editing, openness of responses, environmental correctness, semi-interactive nature, and a variety of response options. Despite the strengths of e-mail as a survey delivery method, a number of weaknesses have been noted. Amid the most commonly reported weaknesses of e-mail as a survey delivery method are technical problems, reduced confidentiality, sample selection, need for supplemental orientation/instructions, presentation difficulties, and bias problems (Truell, 1997). Since each of the survey delivery methods has distinct strengths and weaknesses, it behooves researchers to compare the e-mail method of survey delivery with an established method of survey delivery such as postal mail prior to making decisions on its appropriateness for use.

Of the few studies that have been conducted reporting response rates for both e-mail and postal mail surveys, mixed results have been noted. The researchers of several studies have indicated a higher response rate for postal mail surveys than for e-mail surveys. For instance, Bachmann, Elfrink, and Vazzana (1996) reported a postal mail response rate of 65.6% and an e-mail response rate of 52.5% for surveys distributed to a sample of business leaders in academic institutions. In a study involving health educators, Kittleson (1995) reported a 76.5% return rate for postal mail and a 28.1% return rate for e-mail distributed surveys. Tse (1998) reported a postal mail survey return rate of 52% and an e-mail survey return rate of 7% in a study of attitudes toward the 1997 take over of Hong Kong by China. A postal mail survey return rate of 56.6% and an e-mail survey return rate of 19.3% involving MIS and marketing faculty were achieved in a study by Schuldt and Totten (1994). Mavis and Brocato (1998) reported a postal mail survey response rate of 77% and an e-mail response rate of 56% in their study of medical education professionals. The difference between the postal mail and e-mail distributed surveys was reported to be statistically significant by Mavis and Brocato. In a study of cooperative extension personnel in Montana, Kawasaki and Raven (1995) reported mixed results depending on the participants involved—specialists or agents. Survey return rates for specialist were 56.5% and 43.3% for postal mail and e-mail respectively; survey return rates for agents were 39.4% and 60.6% for postal mail and e-mail respectively. In a study involving AT&T employees, Parker (1992) also reported a higher rate of return for e-mail surveys than for postal mail surveys. Postal mail and e-mail survey returns in the Parker study were reported at 68% and 38% respectively.

In addition to response rates, both e-mail and postal mail surveys have been assessed as to their response speed and their response quality. For example, Bachmann et al. (1996) reported that the response time for e-mail surveys was 6.5 days faster on average than postal mail surveys in their study involving business school deans and department chairpersons. Oppermann (1995) reported that it took only three days to achieve a 23.6%

return of surveys distributed by e-mail in a study of geographers. Mavis and Brocato (1998) compared the number of days it took for e-mail surveys and postal mail surveys to be returned in their study of medical education professionals. They found that the response speed difference between the e-mail surveys and the postal mail surveys to be significant with e-mail surveys being the faster method. In regards to comparing the response quality of e-mail and postal mail surveys, researchers have reported similar response quality. For example, Tse (1998) compared the quality of e-mail surveys and postal mail surveys and found them to be of comparable quality. Mavis and Brocato (1998) examined the thoroughness of survey completion in their study comparing e-mail with postal mail distributed surveys. In regards to thoroughness, they found that returned e-mail and postal mail surveys achieved completeness ratings of 86% and 84%, respectively.

Researchers have touted the notion that e-mail will be the preferred survey delivery method in the 21st Century (e.g., Bachmann et al., 1996). An extensive review of the literature revealed relatively few studies in which the effectiveness of e-mail is compared with postal mail as a survey delivery method (i.e., Bachmann et al., 1996; Kiesler & Sproull, 1986; Kittleson, 1995; Marvis & Brocato, 1998; Parker, 1992; Rafaeli, 1986; Schuldt & Totten, 1994; Tse, 1998). The low number of studies comparing the two survey delivery methods may be related to an unwillingness of participants to respond to e-mail messages or to an unwillingness on the part of researchers to adopt more fully the procedure of sending surveys via e-mail. Perhaps it was best stated by Kittleson (1995) when he noted that "The potential for collecting data through e-mail is relatively unknown in the social sciences." (p. 27) Mehta and Sivadas (1995) stated ". . . very few studies have attempted to evaluate newer 'information technologies' as a way of collecting data." (p. 429) In addition, Bachmann et al. (1996) pointed out that "The earliest studies of e-mail surveys were restricted to populations sampled from within a single company or university." (p. 31) Thus, this research builds upon the previous studies that have examined the feasibility of e-mail as a survey delivery method by using a business education setting and by incorporating recommended changes put forward by earlier researchers into the study. Specifically, the participant group represents a broad selection of individuals working in a wide variety of roles within the field of business education. Results of this study are expected to provide insight as to the potential of using e-mail as a survey delivery method in a business education setting. As noted by Truell (1997), "As more studies employing e-mail are conducted, researchers may smooth out these rough spots associated with e-mail use." (p. 61)

Purpose

The purpose of this study was to examine the response rate, response speed, and response quality of e-mail surveys and postal mail surveys among leaders in the field of business education. Specifically, answers to the following questions were sought:

1. What is the response rate of e-mail surveys and postal mail surveys distributed to leaders in the field of business education?

2. Is there a difference in the response speed of e-mail surveys and postal mail surveys distributed to leaders in the field of business education?

3. Is there a difference in the response quality of e-mail surveys and postal mail surveys distributed to leaders in the field of business education?

Method

This section describes the procedures used during the study. Discussed are the participants, data collection, instrument, and data analysis.

Participants

Participants in this study were leaders in the field of business education as determined by their inclusion on the *Business Education Professional Leadership Roster* appearing in the December 1998 issue of the *Business Education Forum*. All individuals appearing on the *Business Education Professional Leadership Roster* listing an e-mail address were sent a test message to verify a working account. Individuals who were listed more than once on the *Business Education Professional Leadership Roster* were only counted one time for the purpose of this study. Individuals whose test e-mail message was returned as undeliverable were deleted from the list of possible participants. Of the individuals listed on the *Business Education Professional Leadership Roster*, 256 had working e-mail addresses on the day the verifying test message was sent.

Data Collection

To collect data, the 256 participants described in the previous section were then randomly assigned to one of two groups. One group was e-mailed the Business Education Leadership Survey while the second group was mailed a paper version of the same instrument. Both e-mail and postal mail surveys were sent to the participants on the same day. Three weeks after the initial distribution of e-mail and postal mail surveys, a follow up e-mail survey or postal mail survey was sent to each non respondent. Responses to the second round of survey distribution were collected through day 56.

Instrument

Since the purpose of the study was to examine the response rate, response speed, and response quality of e-mail and postal mail survey delivery methods among leaders in the field of business education, a dummy instrument was developed by the researchers. The instrument consisted of ten questions—five questions were close ended and five questions were open ended. Close-ended questions were designed so that all participants had an appropriate response option. The open-ended questions were designed to solicit a specific number of responses from the participants. The instrument was reviewed for clarity and for interest to leaders in the field of business education by an individual who had appeared on the *Business Education Professional Leadership Roster* in past years. Suggestions made by the reviewer were incorporated into the final instrument. It should be noted that both the e-mail and postal mail versions of the surveys consisted of the same questions. The e-mail version of the survey was of a slightly different format than the postal mail version to avoid potential word wrap viewing problems. Recipients of the e-mail version of the survey were also provided additional options of mailing or faxing their completed surveys to the researchers. Mail and fax options were made available to e-mail survey recipients because of the flexibility these options provide respondents (Parker, 1992; Truell, 1997).

Data Analysis

A variety of analytical techniques will be used to answer the three research questions. To determine the response rate of e-mail and postal mail delivered surveys among leaders in the field of business education, descriptive statistics were used. Specifically, the percentages of usable e-mail and postal mail surveys returned were used to describe the response rates sought in question one. To determine if there was a difference in the response speed of e-mail and postal mail delivered surveys among leaders in the field of business education, a t-test was used. Response speed was determined by the number of days it took to send and receive a usable survey. E-mail surveys returned via postal mail were coded as e-mail surveys for the purpose of speed analysis. To determine if there was a difference in the response quality of e-mail and postal mail delivered surveys among leaders in the field of business education, a t-test was used. Response quality for each survey was determined by totaling the number of responses provided by participants on each survey. E-mail surveys returned via the U.S. postal service were coded as postal mail surveys for the purpose of quality analysis. Alpha for all tests of significance was set at .05.

Findings

This section provides a comparison of the response rate, response speed, and response quality of e-mail and postal mail surveys. First, a critique of the response rates of e-mail and postal mail surveys is presented. Second, an analysis of the response speeds of e-mail and postal mail surveys is put forward. Lastly, a comparative review of the quality of e-mail and postal mail surveys is reported.

Response Rate

Question one sought to determine the response rate of e-mail surveys and postal mail surveys distributed to leaders in the field of business education. Percentages were used to determine the response rates. Overall, 59 (46%) of the 128 e-mail surveys distributed were returned to the researchers in one form or another. Specifically, 34 (26.6%) surveys were completed and returned via e-mail, 13 (10.1%) were completed and returned via postal mail, and 12 (9.4%) were returned via e-mail but were blank and thus deemed unusable. The total usable e-mail response was 47 (36.7%). Of the 128 surveys distributed via postal mail, 73 (57%) were completed and returned. All postal mail surveys returned provided usable data. Table 1 provides a breakdown of e-mail and postal mail survey response rates.

Table 1
Response Rate of E-Mail and Postal Mail Surveys

	Distribution Method			
	E-Mail (%)		Postal Mail (%)	
Surveys returned completed	47[a]	(36.7%)	73	(57%)
Surveys returned unusable	12	(9.4%)	0	(0%)
No reply	69	(53.9%)	55	(43%)
Total surveys distributed	128	(100.0%)	128	(100%)

[a] Thirteen e-mail surveys were return via postal mail

Response Speed

Question two sought to determine if there was a difference between e-mail surveys and postal mail surveys with regard to response speed. As discussed in the data analysis section, response speed was determined by the number of days it took to send and receive a usable survey. Further, e-mail surveys returned via the postal mail were coded as e-mail surveys for the purpose of speed analysis. On average, it took 12.5 days over the two rounds of instrument distribution for an e-mail survey to be returned. By contrast, it took on average 24.2 days over the two rounds of instrument distribution for a postal mail survey to be returned. Results of the data analysis t (118) = 5.42, $p < 0.00$ indicate a statistically significant difference between the response speed of e-mail distributed and postal mail distributed surveys. E-mail surveys were significantly faster than postal mail surveys in being returned to the researchers.

Response Quality

Question three sought to determine if a difference existed between e-mail surveys and postal mail surveys with regard to response quality. As noted in the data analysis section, e-mail surveys returned via the U.S. postal service were coded as postal mail surveys for the purpose of quality analysis. On average, participants responding to the e-mail version of the survey completed 20.9 of the 35 possible responses. By contrast, respondents filling out the postal mail version of the survey completed, on average, 19.4 of the possible 35 responses. Results of the data analysis t (118) = -0.99, $p < 0.32$ indicate no statistically significant difference between the response quality of e-mail and postal mail distributed surveys.

Conclusions and Discussion

As is the case with most studies, caution should be used when interpreting the result of the current study. Specifically, generalizing beyond the current group of participants is not possible given the non-probability method of their selection. Despite the generalization limitation just noted, this study is significant in that it is the first to examine the response rate, response speed, and response quality of both e-mail and postal mail surveys distributed in a business education setting. The results of this study lend support to several conclusions.

First, the postal mail distribution method achieved a higher return rate than the e-mail distribution method. Results of the current study are consistent with most earlier research comparing e-mail surveys and postal mail surveys with regard to return rates. The common thread that runs through similar studies (e.g., Bachmann et al., 1996; Kittleson, 1995; Mavis & Brocato, 1998; Schuldt & Totten, 1994; Tse, 1998) and the current study is that higher return rates were obtained with postal mail surveys than were achieved with e-mail surveys. Specific to the current study, the usable postal mail and e-mail survey response rates were 57% and 36.7%, respectively.

Second, the response speed of e-mail distributed surveys is significantly faster than the response speed of postal mail distributed surveys. The results of this study are consistent with the work of Bachmann et al. (1996), Mavis and Brocato (1998), and Oppermann (1995) in that e-mail surveys were returned significantly faster than were postal mail surveys. Particular to the current study, it took an average of 12.5 and 24.2 days for e-mail and postal mail surveys to be returned to the researchers, respectively.

Third, the response quality of e-mail distributed surveys and postal mail distributed surveys are comparable. The findings of the current study in regard to the response quality of e-mail and postal mail surveys are consistent with the work of other researchers (i.e., Mavis & Brocato, 1998; Tse, 1998). Specific to this study, no significant difference was found in participant response quality to e-mail and postal mail surveys

Implications

Given the above conclusions and discussion, the following implications for practice are offered. Clearly, the results of this and other studies have shed light as to the limitations and opportunities of using e-mail as a survey delivery method when compared to postal mail. Perhaps the most significant limitation of using e-mail as a survey delivery method is the non probability sampling nature of participant selection. For example, if the researchers in this study wanted to generalize to the population of all individuals appearing on the *Business Education Professional Leadership Roster*, the e-mail method of delivery would not have been a viable option for two reasons. First, not all individuals appearing on the *Business Education Professional Leadership Roster* listed e-mail addresses and as a result would be excluded from the study by default. Second, participants whose listed e-mail address was inaccurate or inoperable would also be excluded from the study. Thus, the major limitation of e-mail surveys may indeed be the inability to generalize beyond the participants.

Despite the just noted sampling limitation of participants for e-mail surveys, there may be instances when e-mail may be the preferred method of survey delivery. For example, if the entire population being surveyed possess working e-mail addresses, e-mail may be a more useful method of survey delivery if speed is of the essence. Another example of when the use of e-mail may be appropriate is when pilot testing a instrument. When pilot testing an instrument, the use of e-mail can save considerable time, not to mention expense. Further, recipients of the pilot instrument can interact with the researcher to clarify questions that may arise regarding the instrument and vice versa. The results of the current study support the use of e-mail as a survey delivery method in limited situations, such as when speed is of the essence, since the quality of participant responses in this and other studies was of comparable quality.

As with other steps in the survey research process, the choice of a survey delivery method must be carefully evaluated by the investigator before adoption. Given the relatively new and limited use of e-mail as a survey delivery method in studies, it may be necessary to limit the use of e-mail to applications where speed is of the essence and to populations where all subjects possess working e-mail addresses. Regardless, as e-mail becomes more widely used, it may indeed become the survey delivery method of choice in the 21st century.

Recommendations for Further Research

Based on the review of related literature and the analysis of data, the following recommendations for further research are offered:

1. This study should be replicated with a larger group of participants and include a follow-up component. The follow-up component should be directed toward e-mail respondents and non-respondents to determine why they did or did not respond to the survey. A study of this nature could shed light as to whether the non-response is due to technical difficulties, lack of confidentiality, or some other reason.

2. A study comparing the response rate, response speed, and response quality of surveys presented on the Internet with postal mail surveys should be conducted. Many businesses and organizations post surveys on the Internet as a method of collecting data from their various publics. Participants may be more likely to respond to a survey presented on the Internet than they are to a survey presented on e-mail simply because of format and familiarity. E-mail messages could be sent to participants with a link to the survey site embedded in the text for ease of locating and responding to the survey.

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A Comparison of Computer Workforce Skills:
Secondary Academic Teachers
vs.
Workforce Development Teachers

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Abstract

Computer skills needed for entry-level employment in North Carolina have been identified; yet, those employers indicate that a majority of the recent high school graduates do not possess the needed skills. Information is to be provided during the presentation regarding the perceptions of computer skills needed for employability in the 21st Century.

Introduction

Much discussion has occurred in recent years about the need to prepare today's students for tomorrow's workforce in a technology-based global economy. To prepare young people to complete in the technology-based economy, schools must help students master appropriate skills required for employment. With today's continued emphasis on technology, students must also understand technological innovations and related issues that will affect students' personal and professional lives. Consequently, schools must prepare students to live knowledgeably and contributive productively in today's complex national and international workplace.

In order to maintain a prepared workforce; the traditional, theoretical-based educational delivery system may not be appropriate for training tomorrow's workforce today. Consequently, educators from all disciplines prepare students for the workforce; and the preparation for the workforce begins early in the educational process. Therefore, educators at the beginning of the educational process need to implement instructional strategies to teach and refine the skills identified by business needed for the world of work. Tomorrow's workforce may need different skills than what is currently being taught in public schools; thus, educators need to design instruction to prepare students with the competencies and skills desired by employers for entry-level employment.

The Problem

Recent educational reform initiatives resulting from business, education, government, and community leaders' commitment to an improved workforce and an educated and civic populace are based on reports from any number of commissions, task forces, panels, and study groups. Many of these reports have indicated schools are failing to adequately educate students and have issued improvement guidelines outlining what schools should do to prepare students for the workplace. Skills needed for entry-level employment in North Carolina have been identified (Mobley, Joyner, & Peel, 1998); yet, those employers indicate that a majority of the recent high school graduates do not possess the needed skills. Considering the apparent lack of specific basic skills needed for entry-level employment and the lack of post-high school education being obtained by students throughout the United States, a critical issue needs to be examined. That is the primary focus of this study: do secondary teachers-both academic and workforce development-perceive the same computer skills identified by employers that are needed for entry-level employment upon graduation from high school as also being required for completed of a secondary school program? Further, do secondary teachers perceive that recent high school graduates possess the computer skills identified by employers as being required for entry-level employment upon graduation from high school? Therefore, in order to adequately prepare high school graduates for the future, secondary school teachers may need to refocus existing curricula to prepare high school graduates for entry-level positions.

Methodology

A survey of employers in each of North Carolina's 100 counties was used to determine basic academic and workforce development skills required of employees with only a high school diploma. In generating the Inventory of Workforce Skills Needed by High School Graduates (IWSNHSG), policy and position papers issued by a number of government, manufacturing, and educational organizations. From the list or competencies identified, an instrument was designed to determine the importance of the academic and workforce development skills required of those employments with only a high school diploma. This six-page instrument was designed to have a representative from the firm indicate the specific skills required of recent high school graduates who enter the world of work upon completion of secondary education. Statements concerning skills or competency levels were generated from a review of current reports on education, and these skill statements addressed not only academic concern; but issues regarding personal attitudes and conduct were included as well. Based upon the data collected, the survey instrument was revised to be used with North Carolina secondary school teachers. The revised instrument was designed to obtain information regarding secondary teachers' perceptions of the requirement of such skills for graduation and the possession/non-possession of such skills by high school graduates.

Also requested in the ISTPWS were skill levels needed by students for graduation holding high school diplomas. Statements regarding skills or competencies were generated from a review of current reports on education, and these skill statements addressed not only academic concerns but issues regarding personal attitudes as well. Nine categories were used to group the skill statements for the survey. Category headings were generally patterned after an earlier study conducted by Northern Illinois University (1991) or reports such as the SCANS (1991), which only broadly defined the skill areas. The nine skill categories used in the ISTPWS were: (1) Reading, Writing, and Math Skills, (2) Communication Skills, (3) Critical Thinking Skills, (4) Group Interaction Skills, (5) Personal Development Skills, (6) Computer Skills, (7) Technological System Skills, (8) Leadership Skills, and (9) Employment Skills. Information reported in this paper is limited to skills category 6-Computer Skills.

Reliability and Validity

After the IWSNHSG had been developed, the instrument was reviewed by three individuals who were perceived as experts in Workforce Development Education. Further, these individuals indicated that the instrument was designed to obtain the data needed to answer the research questions to be addressed in this study-the instrument was valid. In addition, the IWSNHSG was administered to 50 individuals enrolled in two workforce development education courses at East Carolina University. The results were collected and analyzed to test for reliability. A Cronbach's Alpha, a = .92, was derived, which indicated a moderately high reliability. Upon receipt of the reliability and validity certification, then at least one employer in each of North Carolina's 100 counties, identified through the Chamber of Commerce On-Line Labor Market Information Services Directory, was mailed an instrument. The revised instrument, Inventory of Secondary Teachers' Perceptions of Workforce Skills (ISTPWS), was reviewed by five individuals who were perceived as experts in survey research methodology. After these five individuals indicated that the instrument was valid, the ISTPWS was administered to 100 North Carolina Workforce Development secondary teachers at a statewide conference in 1998. The results were collected to test for instrument reliability. A Cronbach's Alpha, a = .89, was derived, which indicated a moderately high reliability.

During the 1999 Spring Semester, the ISTPWS were mailed to secondary academic and workforce development education teachers throughout North Carolina. A stratified random sample based on the three North Carolina geographic regions (Coastal, Piedmont, and Mountain) was used in selecting the secondary teachers who were asked to complete the instrument. Approximately one month after the initial mailing, a follow-up mailing was conducted for those not responding to the first mailing. A phone call was placed to the principal of schools which did not respond to the first two mailings.

Findings

A total of 1821 surveys were sent to secondary school educators throughout North Carolina. Out of those 1821 surveys, 1164 usable surveys were returned—a 64% response rate. According to Wunsch (1986), a 60 % survey return rate constitutes a representative response.

Information presented in Table 1 displays the chi square values and the probability levels for obtaining a statistically significant difference with one degree of freedom. Information is presented for nine computer skills in two categories: (1) students need for the computer skill in order to graduate from high school and (2) students possession of the computer skill at the times of graduation from high school.

Keyboard

Of the teachers who responded to the survey, 96% of those teachers indicated the computer skill-operating a keyboard-was needed by students in order to graduate from high school. For the criterion, operating a keyboard as perceived by secondary school educators as needed for graduation, a chi-square value of 6.29E212 with a probability of 1 was derived, which was not statistically significant at an alpha level of .05. Yet, 79% of those teachers responding to the survey indicated that students upon graduation from high school had the computer skill-operating a keyboard. For the criterion—operating a keyboard—as perceived by secondary school educators as being possessed at the time of graduation, a Chi Square value of 2.3E-87 with probability of 1 was derived, which not statistically significant at an alpha level of .05.

Word Processing

Of the teachers who responded to the survey, 89% of those teachers indicated the computer skill-operating word processing software-was needed by students in order to graduate from high school. For the criterion—operating word processing—as perceived by secondary educators as needed for graduation, a Chi Square value of 4.68E156 with a probability of 1 was derived, which was not statistically significant at an alpha level of .05. Yet, 73% of those teachers responding to the survey indicated that students upon graduation from high school had the computer skill-operating processing software. For the criterion—

Table 1

Needed for Graduation

Skills	F	%	X2	P
11.6.1 Operate Keyboard	1112	96%	6.29E-212	1
11.6.2 Operate Word Processing Software	1036	89%	4.68E-156	1
11.6.3 Operate Spreadsheet Software	815	70%	1.791E-42	1
11.6.4 Operate Database Software	826	71%	2.08E-46	1
11.6.5 Operate Desktop Publishing Software	652	56%	4.07E-05	0.99491
11.6.6 Operate Email/Internet Software	838	72%	6.608E-51	1
11.6.7 Understand DOS Commands	570	49%	0.481774	0.48762 *
11.6.8 Operate Webpage Software	407	35%	1.082E-24	1
11.6.9 Operate Windows Software	873	75%	3.011E-65	1

Has upon Graduation

Skills	F	%	X2	P
11.6.1 Operate Keyboard	920	79%	2.3E-87	1
11.6.2 Operate Word Processing Software	850	73%	1/3E-55	1
11.6.3 Operate Spreadsheet Software	559	48%	0.17757	0.6734724
11.6.4 Operate Database Software	547	47%	0.0402	0.8410992
11.6.5 Operate Desktop Publishing Software	442	38%	2.3E-16	1
11.6.6 Operate Email/Internet Software	640	55%	0.00067	0.979291
11.6.7 Understand DOS Commands	361	31%	2.2E-38	1
11.6.8 Operate Webpage Software	186	16%	3E-119	1
11.6.9 Operate Windows Software	687	59%	7.5E-10	0.9999782

* P< .05

operating word processing software— as perceived by secondary school educators as being possessed at the time of graduation, a Chi Square value of 1.3E55 with probability of 1 was derived, which was not statistically significant at an alpha level of .05.

Spreadsheet

Of the teachers who responded to the survey, 70% of those teachers indicated the computer skill-operating spreadsheet software-was needed by students in order to graduate from high school. For the criterion—operating spreadsheet software—as perceived by secondary school educators as needed for graduation, a Chi Square value of 1.791E42 with a probability of 1 was derived, which was not statistically significant at an alpha level of .05. Yet, 48% of those teachers responding to the survey indicated that students upon graduation from high school had the computer skill-operating spreadsheet software. For the criterion—operate spreadsheet software—as perceived by secondary school educators as being possessed at the time of graduation, a Chi Square value of .17757 with probability of .6734724 was derived, which was not statistically significant at an alpha level of .05.

Database

Of the teachers who responded to the survey, 71% of those teachers indicated the computer skill-operating database software-was needed by students in order to graduate from high school. For the criterion—database software—as perceived by secondary school educators as needed for graduation, a Chi Square value of 2.08E46 with a probability of 1 was derived, which was not statistically significant at an alpha level of .05. Yet, 47% of those teachers responding to the survey indicated that students upon graduation from high school had the computer skill-operating database software. For the criterion—operating database software—as perceived by secondary educators as being possessed at the time of graduation, a Chi Square value of .0402 with probability of .8410992 was derived, which was not statistically significant at an alpha level of .05.

Desktop Publishing

Of the teachers who responded to the survey, 56% of those teachers indicated the computer skill-operating desktop publishing software-was needed by students in order to graduate from high school. For the criterion—operating desktop publishing software—as perceived by secondary school educators as needed for graduation, a Chi Square value of 4.07E05 with a probability of .99491 was derived, which was not statistically significant at an alpha level of .05. Yet, 73% of those teachers responding to the survey indicated that students upon graduation from high school had the computer skill-operating desktop publishing software. For the criterion—operating desktop publishing software—as perceived by secondary school educators as being possessed at the time of graduation, a Chi Square value of 2.3E16 with probability of 1 was derived, which was not statistically significant at an alpha level of .05.

Email/Internet

Of the teachers who responded to the survey, 72% of those teachers indicated the computer skill-operating Email/Internet software-was needed by students in order to graduate from high school. For the criterion—operating email/Internet—as perceived by secondary school educators as needed for graduation, a Chi Square value of 6.608E51 with a probability of 1 was derived, which was not statistically significant at an alpha level of .05. Yet, 55% of those teachers responding to the survey indicated that students upon graduation from high school had the computer skill-operating Email/Internet software. For the criterion—operating email/Internet software—as perceived by secondary school educators as being possessed at the time of graduation, a Chi Square value of .00067 with probability of .979291 was derived, which was not statistically significant at an alpha level of .05.

DOS Commands

Of the teachers who responded to the survey, 49% of those teachers indicated the computer skill-understanding DOS commands-was needed by students in order to graduate from high school. For the criterion—understand DOS commands—as perceived by secondary school educators as needed for graduation, a Chi Square value of .4817738 with a probability of .48762 was derived, which was statistically significant at an alpha level of .05. Yet, 31% of those teachers responding to the survey indicated that students upon graduation from high school had the computer skill-understanding DOS commands. For the criterion—understanding DOS commands—as perceived by secondary school educators as being possessed at the time of graduation, a Chi Square value of 2.2E38 with probability of 1 was derived, which was not statistically significant at an alpha level of .05.

WebPage

Of the teachers who responded to the survey, 35% of those teachers indicated the computer skill-operating web page software-was needed by students in order to graduate from high school. For the criterion—operating Webpage software—as perceived by secondary school educators as needed for graduation, a Chi Square value of 1.082E24 with a probability of 1 was derived, which was not statistically significant at an alpha level of .05. Yet, 16% of those teachers responding to the survey indicated that students upon graduation from high school had the computer skill-operating web page software. For the criterion—operate Webpage software—as perceived by secondary school educators as being possessed at the time of graduation, a Chi Square value of 3E119 with probability of 1 was derived, which was not statistically significant at an alpha level of .05.

Windows

Of the teachers who responded to the survey, 75% of those teachers indicated the computer skill-operating window software-was needed by students in order to graduate from high school. For the criterion—operate windows software—as perceived by secondary school educators as needed for graduation, a chi-square value of 3.011E65 with a probability of 1 was derived, which was not statistically significant at an alpha level of .05. Yet, 59% of those teachers responding to the survey indicated that students upon graduation from high school had the computer skill-operating windows software. For the criterion—operating windows software—as perceived by secondary school educators as being possessed at the time of graduation, a Chi Square value of 7.5E10 with probability of .9999782 was derived, which was not statistically significant at an alpha level of .05.

For each of the nine computer skills, the chi square goodness of fit statistical procedure was used to determine if a significant difference existed between the observed and expected responses from the participant. Only one of nine computer skills—Understand DOS commands—was identified by the respondents as needed by students in order to graduate from high school, which was statistically significant.

Conclusions

The workplace requires high skills (Mobley, 1998); yet, North Carolina industry leaders seek employees whose entry-level skills are low level and non-technical skills. Specifically, North Carolina employers indicated the requirement of three technical computer skills-(1) operate a keyboard, (2) operate word processing software, and (3) operate windows software. Results of this study coincide with Mobley's findings.

However, the participants in this study were North Carolina secondary school educators and their perception of required computer skills needed for graduation were limited to low-level, non-technical computer skills. While only one of the nine computer skills had a statistically significant difference in this study, practical significance needs to be considered. Over 70% of the participants indicated that secondary school students needed six of the nine computer skills-(1) operate keyboard, (2) operate word processing software, (3) operate spreadsheet software, (4) operate database software, (5) operate email/internet software, and (6) operate Windows software—in order to graduate. For the remaining three computer skills-(1) operate desktop publishing software, (2) understand DOS commands, and (3) operate WebPages software—less than 60% of the participants indicated that these skills were needed by students for graduation. Thus, North Carolina secondary school educators' perception of the need for computer skills is at a higher level than the computer skills perceived by North Carolina employers as being required for entry-level employment upon graduation from high school.

Conversely, North Carolina secondary schools educators perceive only two-(1) operate keyboard and (2) operate word processing software-of the nine computer skills are possessed by North Carolina secondary school students at the time of graduation. The perception of computer skills possessed by North Carolina secondary school students at the time of graduation according to North Carolina secondary school educators more closely aligns with the computer skills required by North Carolina industry leaders for entry-level positions. Therefore, secondary educators may need to rethink the computer skills taught at the secondary level as well as the amount of emphasis placed on computer skills in the current curriculum.

Implications

Numerous North Carolina secondary school students are exiting high school and are entering the workforce lacking the necessary skills to succeed (Moody, 1998). Apparently a lack of understanding exists between North Carolina secondary school educators and North Carolina employers as to what computer skills should be taught at the secondary level. Therefore, collaboration must occur between North Carolina secondary school educators and North Carolina business leaders to ascertain which computers skills address the needs of both industry and education. Further, all North Carolina secondary school educators and North Carolina business leaders need to be aware of how computer skills enhance students' ability to succeed, not only at school but also in life.

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Comparison of the Diskette Survey Responses and Paper and Pencil Survey Responses on Self-Directed Learning Instruments with Business Educators

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Abstract

Survey methodology challenges researchers to collect data in the most effective and efficient manner possible while retaining a high, non-biased response. The traditional method of collecting survey data, using paper and pencil, can be a costly and time consuming task. The development of technology allows surveys to be collected through the use of electronic media. It is a concern of researchers using technology in research, more specifically the use of diskette surveys, to determine if collecting data using technology yields different results than the traditional paper and pencil survey method.

Review of Literature

The review of literature revealed a dearth of empirical studies that compared responses from paper and pencil format surveys to the responses from diskette format surveys. Studies have compared the use of e-mail surveys to paper surveys (Kittleson, 1995; Allen & Fry; 1986; Kiesler & Sproul, 1986; Rafaeli, 1986). The majority have shown a lower response rate for the e-mail survey method. In a corporate setting, an e-mail survey design provided a higher response rate than the traditional method (Parker, 1992). In other groups, e-mail surveys have provided high response rates. Kawasaki & Raven (1995) conducted a study by e-mail with cooperative extension agents and reported a response rate of 83.0%.

Studies (Meehan & Burns, 1997; Webster, 1995; Sudmalis, 1992; Allen, 1987) have described the results of using electronic survey methods. More precisely, the majority of studies describe the response rates to electronic survey methodology. Allen (1987) found from surveying a group of 249 individuals that 29.0% responded in the electronic survey group and 49.0% responded to the traditional survey. Webster (1995) used a survey method that utilized an online public access system to dispense a pencil and paper survey. This approach of surveying users provided responses instantaneously in machine readable form. However, the first test of the electronic survey system achieved a response rate of less than 10%. Sudmalis (1992) conducted a survey in an e-mail group (n=558) which provided a delivered sample of 14.3%. Mavis & Brocato (1998) reported a higher response rate for postal service surveys (77.0%) compared to e-mail surveys (56.0%). Meehan & Burns (1997) completed an electronic survey of a listserv discussion group that yielded a response rate of 23.6%. A technological problem with surveying a listserv group is the difficulty of defining the target population.

Allen and Fry (1986) reported no difference in the means of sophomore's attitudes between computer and scanned paper groups. The computer-group members reported having more computer experience and students in the scanned paper group were more likely to overestimate their actual grade point average. Furlong (1997) addressed the concern that data from electronic surveys may not be as representative as that from a mail survey. Researchers may receive a much more biased response from electronic survey methods.

Even though there are concerns with using electronic survey methods than with traditional paper and pencil surveys together, there are also potential benefits. Respondents to electronic surveys found that respondents who completed computer surveys reported to find them more interesting and seemed to be more aware of their thoughts and feelings while completing them (Rosenfeld,1993; Allen, 1987). Allen (1987) also reported computer respondents gave more varied responses. Another benefit electronic surveys is that they are a fast and low-cost research option they offer (Furlong; 1997, Goree & Marszalek, 1995) . Furlong (1997) also stated other potential benefits of using e-mail to conduct survey research included the fact that the lack of intermediaries increases the chances that respondents will receive the survey promptly, asynchronous communication allows users to think about answers, the medium itself may encourage users to respond more candidly, and e-mail distribution lists are used to distribute questions and collect responses.

Purpose

The purpose of this study was to compare the responses to a survey when given the choice to complete a diskette format or traditional paper and pencil format. The null hypothesis was there would be no significant differences between paper and pencil format responses compared to diskette responses.

Methodology

Participants

The complete frame for this study consisted of all business teachers (N=1679) in Pennsylvania. The survey sought the participation of a randomly selected group of business teachers (n=240) in Pennsylvania.

Instruments

The Oddi Continuing Learning Inventory (OCLI), Bartlett-Kotrlik Inventory of Self-Learning (BISL), a resource inventory, and a demographic section were placed in a booklet and diskette format (minimum requirements for diskette were IBM platform, 386PC, & Windows based). The OCLI consists of 24 items in a Likert type scale. Oddi (1986) stated when the OCLI was administered to a sample of 271 graduate students it had an estimated internal reliability of .87 and test-retest reliability of .89. These estimates of reliability where confirmed by Six(1989), Landers(1989), and Oddi(1984) reporting the estimated reliability coefficients (Cronbach's alpha) of .77, .85, and .77. These scores are above the Acommonly used criterion level of .70" (Conti & Fellenz, 1986, p. 74), which shows instrument reliability. A factor analysis revealed three factors: a general factor, ability to be self-regulating, and avidity of reading. This factor analysis confirmed the validity of the OCLI scales.

The BISL includes 56 questions that asses self-learning. The instrument was in the development stages. At the time of the study, there were no reliability scores available. The instrument was developed through the use of a comprehensive review of literature on self-directed learning. The resource inventory examined the types of resources business teachers used to learn and the amounts of time they used the resources.

The demographic section collected data concerning the participants' gender, age, educational level, ethnicity, years of teaching experience in business education, job tenure, current pursuit of further education in business education, and marital status. All demographic variables have been shown to have relevance to self-directed learning.

Data Collection

All participants (n=240) received a cover letter, paper survey, and disk survey. One week following the initial mailing, the complete sample received a post-card follow-up. At the end of the second week, all individuals who did not respond received a second packet including a second cover letter, paper survey, and disk survey. At the end of the third week a strong phone follow-up was made to the non-respondents to complete the survey.

Data Analysis

Means, standard deviations, frequency, and percent were used to describe the participants and their responses in the study. Inferential t-tests were used to compare the means of the total Oddi Continuing Learning Inventory score, total Bartlett-Kotrlik Inventory of Self-Learning inventory score, individual scales on the Oddi Continuing Learning Inventory (OCLI), individual scales on the Bartlett-Kotrlik Inventory of Self-Learning (BISL), age, and years teaching experience in business education. The non-parametric test of chi-square, was used to compare the respondents choice of survey method. Chi-square was also used for comparing the ordinal and nominal data including the variables of gender, educational level, ethnicity, job tenure, pursuit of further education in business education, and marital status.

Results

Of the 240 business teachers, 117 (48.8%) responded to the survey. Table 1 shows that the non-respondents did not differ significantly from the respondents on the BISL score or OCLI score. Of the respondents, 89 (76.1%) chose to complete the paper survey and only 28 (23.9%) chose to complete the disk survey. Over two-thirds, 75 (64.7%) were female. Table 2 shows the majority of the respondents, 62.8% (n=56) hold a degree higher than a 4 year degree.

Table 1
Comparison of Respondents and Non-Respondents on Oddi Continuing Learning Inventory Scores and Bartlett-Kotrlik Inventory of Self-Learning Scores

	Respondents [a]			Non-Respondents [b]					
	n	M	SD	n	M	SD	df	t	p
OCLI	73	130.55	14.30	14	131.57	17.43	86	-.24	.814
BISL	73	53.84	5.51	14	51.07	7.00	85	1.65	.102

[a] n=74. [b] n=15.

Table 2
Educational Level of Participants

Education Level	Number	Percent
4 Year Degree	33	37.1
Masters Degree	31	34.8
Masters Plus 30/ Specialist Certificate	22	24.7
Doctoral Degree	2	2.2
Other	1	1.1

The respondents taught on average of 19.3 (SD=10.2) years. The average salary of the respondents was $47.8 thousand (SD=13.1). Over two-thirds (81.2%, n=95) of the business teachers were married. The ethnicity of the business teachers was primarily Caucasian (n=105, 89.7%). Only 3 (2.6%), were Black and 2 (1.7%) were Native American. Of the respondents, 26.7% (n=31) were seeking further education in business education. The mean age of the business teachers was 45.1 (SD=9.7) years. Of the respondents, 57.9% (n=62) would prefer to teach computer courses.

The mean score on the OCLI for business teachers that completed the paper survey was 134.0 (SD=14.7). The maximum score on the OCLI, of the paper survey group, was 166 and the minimum score was 60. The mean score for the business teachers that completed the diskette format survey was 130.7 (SD=10.2). The maximum OCLI score for the diskette format survey group was 147 and the minimum score for the survey was 105. The mean BISL score for the paper and pencil survey format was 53.4 (SD=5.8) and the mean for the BISL diskette format survey was 56.2 (SD=4.3).

The exploratory factor analysis on the BISL yielded 10 factors within personal, social, and environmental categories. The scales that measure personal factors of self-learning and the estimated reliability of these factors are as follows: intrinsic goal orientation (.88), extrinsic goal orientation (.70), self-efficacy (.99), perceived job performance (.88), and inclined to change/improve (.75). The scales that measure social factors of self-learning and the estimated reliability of these factors are as follows: help seeking (.86), peer learning (.86), and time-management (.69). The scales that measure environmental factors of self-learning and the estimated reliability of these factors are as follows: supportive work environment (.81) and perceived management performance rating (.78). The overall estimated reliability of the BISL was .85. The estimated reliability of the diskette survey group was .81 and .85 for the paper survey group.

Table 3 shows the results of the Chi-square which was used to compare gender, educational level, ethnicity, job tenure, marital status, pursuit of further education, and choice of survey method. The chi-square only revealed a significance difference in the choice of survey method X^2((1 , N=117)=31.80, p<.000). Of the respondents, 89 (76.1%) chose to use paper and pencil survey and 28 (23.9%) chose to use the diskette survey. Chi-square did not reveal any other significant differences. The t-test on age, years teaching experience in business education, and salary did not reveal any significant differences by survey method chosen.

Table 3
Chi-Square Comparison of Education Level, Ethnicity, Job Tenure, Marital Status, Pursuit of Further Education, and Choice of Survey Methods Between Traditional and Diskette Methods

Demographics	n	X^2	df	p
Gender	116	.45	1	.503
Education Level	117	6.37	4	.173
Ethnicity	110	.833	2	.659
Job Tenure	112	.06	1	.809
Marital Status	112	3.04	1	.218
Preference to Teach Computer Classes	107	.64	1	.425
Pursuit of Further Education	116	1.52	1	.217
Choice of Survey Method	117	31.80	1	<.001

Table 4 presents the t-test that revealed no significant differences between the diskette survey group and paper survey group on the OCLI score. An examination of the individual scales on the OCLI, revealed there were no significant difference between the diskette group and paper and pencil group on the scales of general self-directed learning, avidity to reading, and self-regulation. The t-test did reveal there was a significant differences (t(108) = 2.185, p<.031.) between the diskette survey group and the paper survey group on the BISL score. However, the t-test did not reveal a significant difference on the ten factors from the BISL. The researchers do acknowledge the increased chance of alpha error when conducting this number of t-tests.

Conclusions

1. There was a significant difference on the mean score of the BISL between diskette and paper and pencil survey groups.

2. A significantly larger number of business teachers chose to reply via paper and pencil survey format rather than diskette format.

3. There were no significant differences in the demographics between the two groups.

4. There were no significant differences on the mean score or scale scores on the OCLI.

Table 4

Comparisons of Traditional and Diskette Surveys on Oddi Continuing Learning Inventory and Bartlett-Kotrlik Inventory of Self-Learning and Sub-scales.

	Traditional Paper			Diskette					
	n	M	SD	n	M	SD	df	t	p
Oddi Continuing Learning Inventory (Entire Scale)	88	130.72	14.73	23	133.96	10.20	109	.99	.323
General Factor	88	85.53	8.80	24	87.88	4.32	110	1.26	.210
Avidity to Reading	89	23.83	5.65	25	23.40	6.27	112	-.32	.743
Self-Regulation	89	21.25	6.37	25	22.32	5.38	112	.768	.444
Bartlett-Kotrlik Inventory of Self-Learning	87	53.39	5.82	23	56.23	4.28	108	-2.19	.031
Good Job/Performance	88	6.54	.58	23	6.66	.34	109	1.02	.308
Managers Ratings	89	4.41	1.72	24	4.71	1.41			
Willingness to Change/Improve	87	6.11	.81	25	6.26	.63	110	.82	.412
Intrinsic Motivation	88	5.93	.99	28	6.13	.90	114	.943	.347
Self-efficacy	88	5.82	2.03	25	6.49	1.19	111	1.59	.115
Help Seeking	89	6.39	.91	25	6.62	.63	112	.66	.513
Peer Learning	89	4.89	1.56	25	5.10	1.07	112	.63	.530
Supportive Workplace	89	6.39	.91	28	6.13	.90	111	.78	.440
Time Management	89	4.02	1.56	23	4.36	1.40	110	.96	.338
Extrinsic Motivation	88	3.60	1.53	26	3.77	1.12	112	.51	.607

Recommendations

1. Researchers must be made aware there may be differences between data collected on paper and pencil surveys and diskette surveys.

2. Researchers must also be trained in the use of diskette survey methods and be able to select the best method to collected data based on the design and other features of the study.

Implications

Until more research is done, it can not be assumed that collecting data via electronic means provides equivalent results to paper and pencil survey methods. Since responses were significantly different among the two groups, this method of data collection adds more unexplained variance to the research. This method might help improve the effectiveness and efficiency in obtaining responses to surveys however, this group of business teachers chose to use the paper and pencil survey over the diskette.

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A Comparison on Student Performance Outcomes: Distance Learning vs. Traditional On-Campus Learning

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Abstract

The challenge for instructors who are faced with teaching via the Internet for distance education is to remain focused on the needs of the learners and the instructional outcome rather than become sidetracked by the technology used to develop and deliver such course work. Information reported concerns students' perceptions of distance education delivery at the university level.

Introduction

Over 50% of the homes in the United States of America have at least one computer, and 80% of the public schools in the United States of America are connected to the Internet. With the ever increasing access and usage of the Internet according to the National Center for Education Statistics report issued in October 1998, one-third of higher education institutions have offered on-line education courses since 1995. Further, another quarter of the remaining higher education institutions plan to offer courses in the next three year (NCES 98-132). Whether the courses are called distance education, distance learning, distributed learning, or on-line education, a new way of teaching and learning is creating an educational paradigm shift. Thus, the 90's are experiencing a growing transition from the existing dichotomy of campus-based face-to-face instruction to distributed learning environments and teaching models for the new millennium. Therefore, in the wake of phenomenal development of communication, distance education seems to be considered as one of the most adequate and attractive means to face the challenges of education in the 21st Century.

Higher education is facing internal and external pressures to turn to distance education as a strategy to reach students who otherwise are not served because of work schedules, course scheduling conflicts, preferred learning styles, child care schedules, lack of transportation, or disabilities (Field, 1998). Thus, distance learning is emerging as an instructional strategy that could eliminate the barriers posed by traditional instructional strategies. Many educators who have delivered instruction via distance learning believe that distance education is as effective as traditional face-to-face instruction. However, the challenge for instructors, faced with teaching via the Internet, is to remain focused on the needs of the learners and the instructional outcomes and not become sidetracked by the technology (Swift, Wilson, & Wayland, 1998). How educators respond to this new teaching-learning transaction is the focus of much discussion in educational environments throughout the United States and the world.

The Problem

Evaluating distance education on-line programs is a challenge for educators whose major concern is that technology is used effectively to benefit student learning and achievement. For continued funding by states and districts, as well as support by administrators, faculty, and students, some type of evaluation is necessary regarding the components of technology as it affects courses delivered via the World Wide Web. Factors influencing how courses are evaluated include the profile of the students served, the curriculum areas taught, and the type of technology used. Thus, an evaluation program that provides information to program developers and other educational leaders who are responsible for continued funding, recognition, and chance for growth is needed. In addition, information from evaluations is needed to identify potential problems early to maintain academic integrity. Further, administrators, faculty, and institutions need to understand the purpose and direction of the program, which is vital for program decision. Subsequent evaluation efforts may require greater detail and have a long-term impact. Evaluation of selected distance learning courses, offered by the Business, Vocational, and Technical Education (BVTE) Department—the problem of this study-is designed to determine the impact of the BVTE Distance Learning's program on the participants by creating a profile of the participants and examining attitudes toward the technology.

Null Hypothesis

The null hypothesis-Regardless of the location of student learning-on-campus or off-campus-a significant difference will not exist in selected criteria on student performance when a selected course is delivered via distance learning/electronically-was to be investigated.

Limitations

This study is limited to one semester of information processing. The on-campus/on-line section has access to computers connected to Local Area Networks (LANs) while the off-campus/on-line section, who may not have access to LANs, are using home computers with modems. Therefore, a difference in the speed of the delivery of the course may occur when accessing via the Internet the course that employs advanced instructional technologies such as streaming audio and video. Another limitation is that the off-campus/on-line participants may not have taken BVTE's information processing prerequisite courses thus putting them at a disadvantage in terms of expectations from the Department and information processing instructor.

Assumptions

It is assumed that the students have access to, as well as a full understanding of, the technology required for the delivery of the course.

Review of Literature

As distance education initiatives evolve in colleges and universities, continuous assessment and evaluation of the programs, faculty, administration, delivery instruments, and student learning and achievement are essential components of distance education strategies. Learning from a distance is non-contiguous, two-way communication between the learner and teacher using technological mediation. Multiple educational evaluation studies of learning via distance education since the 1920s consistently, and with a degree of replication, indicate a significant difference does not exist in learning outcomes between distance learning and traditional instruction methods. In 1910, Thomas Alva Edison, inventor of the motion picture, first predicted the influence of technology on education. "It seems to me that educators are just waking up to the possibilities of the motion picture in their field. I look for the time, and it's not far distant, when every college and school in the world will boast of its projecting machine and library of educational films, with which to instill first-hand knowledge in the minds of the students. When that time comes, the truant officer will depart as an institution, for instead of the children being driven to school it will then be a difficult matter to keep them away from it" (The Nickelodeon, 63-64). During the years since Edison first made his prediction, technology has evolved into an essential component of the educational delivery system.

According to Klesius, Homan, and Thompson (1997), distance education has always assumed that a distance separates students and teachers that may be geographical, temporal, or contextual; and technology is used to lessen or eliminate the distance barrier. Students have preferred the convenience of distance education to having a face-to-face instructor. Therefore, instructors are charged to carefully plan unique and varied activities and to use current communication methods to reduce the instructional barriers posed by distance education. Because technology offers many options for delivering and receiving education over a distance, many of the assumptions of learning and higher education are being challenged. While the ability of the teacher and students to see each other may not be a necessary condition for effective distance learning, the need for interactive classes is crucial. Technology-old, new and emerging-allows interactivity and collaboration between students and instructor accomplished via streaming real-time video and audio, video or graphics interactivity, two-way computer hookups, or application (Daniel and Stevens, 1997). The use of technology in education is not meant to replicate face-to-face instruction, it is an instructional strategy that will, as Edison predicted early in the century, "...instill first hand knowledge in the minds of the student."

The "No Significant Difference" Phenomenon

Russell, director of the Office of Instructional Telecommunications at North Carolina State University, has published over a ten-year period, a synthesis entitled The No Significant Difference Phenomenon. Hundreds of comparison studies are cited that have been published since the 1920s that are consistent in showing that when used in business, military training, and adult learning, there is no significant difference in learning outcomes between distance learning and traditional instruction methods. However, there is a difference between the two delivery methods in terms of cost and convenience. Russell's survey of research, now in its last edition, supports the argument that no matter what the delivery system is, there is no significant difference in students' performance.

According to Russell (1999), there are very few comparative studies that found measurable benefit to learning that can be attributed to technology. However, researchers also fail in their attempts to show that technology improves learning. Russell's findings support the no significant difference phenomenon because while technology may not improve learning, it does not denigrate it either. The process by which a course is designed to accommodate the existing technology, according to Russell, is the source of the differences. Russell's phenomenon list is criticized by Neil (1998) who reports shortcomings: the research designs are poorly conceived, the statistical analysis is weak or absent, and/or the sample size is too small. Many of the studies do not try to measure learning outcomes at all, but focus instead on attitudinal outcomes-how the students felt about the experience rather than what they learned. The studies that do try to assess student learning as an outcome variable often use tests that measure simple recall of information rather than mastery of higher-order learning. In these cases, Neil is not surprised that there is no significant difference in performance because of the way students acquire factual information.

Effectiveness of Computer-Based Education

A joint effort by International Business Machines Corporation (IBM), the School of Education of Purdue University, the University of Computing Services of Indiana University and the Indiana Department of Education (DOE) and part of the Electronic School District (ESD) reported a study about the effectiveness of computer-based education in 1991. This study of a graduate level instructional computing course remotely delivered in Indiana examined three variables: achievement test scores, time-on-task, and student attitudes. The authors of the study concluded that when total semester final grade averages were used as the indicator of achievement, there were no significant differences observed among the three treatment groups. Therefore, researchers were lead to the unexpected conclusion that computer conferencing is a viable alternative method for teacher training (Cheng, Lehman, & Armstrong, 1991).

The effectiveness of traditional vs. satellite delivery in three masters' degree programs was the focus of a study by Souder (1987). Research in effectiveness, project evaluation, and anecdotal evidence strongly suggested that the distance learners outperformed the traditional learners in several areas. Souder called this a "natural experiment," allowing direct comparisons between traditional and distance teaching and learning. Using a comparative study, students' exams, term papers, and homework assignments were used to measure effectiveness. The study added to the evidence that distance learners should not be considered as disadvantaged in their learning experiences. Rather, the distance learners in this study were observed to gain more than their traditional counterparts. Learners broadened their network of colleagues, skills in working with others and collaborating across distances, and other social skills. The author noted, however, that distance learning requires commitment, maturity, and motivation from the distant student. The success of this study relied on the quick feedback on homework and frequent electronic contacts between instructor and student (Souder, 1993).

CNET news.com (Black, 1997) reported that students learning in a virtual classroom tested 20 percent better across the board than their counterparts who learned in a traditional classroom. Schutte conducted the study in 1996 at California State University at Northridge and reported that the groundbreaking study was the first to provide quantitative data collected on virtual education. Most studies, reported Black (1997), are based on anecdotal data. Two sections were involved in the study-an on campus section and an on campus/on-line section-with standardized conditions such as text, lectures, and exams. The study was intended to assess the merits of a traditional versus virtual classroom environment on student test performance. Schutte hypothesized that face-to-face professor-student interaction is crucial to test performance. However, the data indicated that no significant difference in test performance was observed between the on campus section and the on campus/on-line section (Schutte, 1997).

Controlled studies are very difficult in university settings because threats to validity and reliability are often beyond the influence of the investigator. However, students for whom convenience may be a crucial factor in receiving college credit are earning degrees by satellite, audio, or on-line. Distance education is also effectively being used for rural and inner city classes, enrichment, staff development, and in-service training for teachers and administrators-and the evaluation studies, with a degree of replication, indicate a significant difference does not exist in learning outcomes between distance learning and traditional instruction methods.

East Carolina University

East Carolina University (ECU) is located on 477 acres within the city limits of Greenville, North Carolina. Greenville, population 59,000, is the business, medical, and trade center in the coastal plain region of North Carolina. In 1921, ECU was a small college known as East Carolina Teachers College, became East Carolina University in 1967, and by 1972 was the third largest university in the sixteen-campus University of North Carolina system. ECU is a Doctoral II university that offers more than 200 degree tracks at undergraduate and graduate levels-baccalaureate, master's, and doctoral (education, communication sciences and disorders, and basic medical science). Distance Learning and Extension (1999) reports that ECU offered twenty-six courses by distance learning in 1996. Today, ECU offers more than 100 courses and eight-degree programs which are delivered by the Internet and interactive television.

The Department of Business, Vocational, and Technical Education (BVTE)/Community College Partnership

The Department of Business, Vocational, and Technical Education (BVTE) in the School of Education at East Carolina University has the mission to "prepare and develop professionals in workforce preparedness education and information/office education." Programs offered by the Department include undergraduate programs of study in business education, home economics education, marketing education, and information processing/administrative services (ECU Undergraduate Catalog, 1998). In the 1995 session, the North Carolina General Assembly ratified House Bill 230 that appropriated funds "...to provide expansions expenditures and capital improvements for state departments, institutions, and agencies, and for other purposes" (HB 230). ECU and the BVTE Department were among several North Carolina universities funded to establish a pilot degree program to offer distance education courses to students off campus.

Technology Used by the BVTE Department to Deliver Courses On-Line

The Internet is the primary method of course delivery by the BVTE Department for the off-campus/on-line Partnership section and the on-campus/on-line section studied herein because it is an inexpensive and practical means for employing instructional techniques. The technology used by the BVTE Department for on-line instruction includes a web server, an e-mail server, file transfer protocol (FTP) server, Microsoft Netmeeting, Microsoft Camcorder, streaming technology, and software to facilitate instruction. The web server, or host computer, is located in the BVTE Department and provides the Department's Web site from which students can access course instruction and assignments by following the designated links. The web site and links to course work are accessible from anywhere in the world using the World Wide Web (WWW), and the instructors are responsible for the design and maintenance of their individual course web sites.

Methodology

A survey research design with two intact groups was used to collect data for the study. Both intact groups were undergraduate students who have enrolled in information processing during the 1999 Spring Semester at East Carolina University. One section-on-campus and on-line-was taught via synchronous (face-to-face) and asynchronous (with a time delay) delivery at East Carolina University, and the second section-off-campus/on-line-was delivered via asynchronous (with a time delay) in Eastern North Carolina. Similarities between the two sections are: course content, course materials, and instructor, and the differences between the two sections were: distance from the campus, profile of the student, course prerequisite requirements, and technology used. For example, the on-campus/on-line group had the option of meeting during scheduled class times; and the off-campus/on-line group had flexible scheduling. Course prerequisite requirements were different for the off-campus group. Web page instruction, audio/video presentations, Internet links to related sites, FTP, and email were the types of instructional media used for both groups. Both groups have equal opportunity for interaction with the instructor through the use of email, surface mail, FAX or telephone.

ASIP 3500 Information Processing III

ASIP 3500 Electronic Information Processing III is an advanced document-processing course in which the student learns the advanced integrative features of Microsoft Word. The objectives of the course include: (1) how to insert graphics of various formats into text documents using text wrapping, sizing, editing, borders, captions, and replacing graphics; (2) how to design letterhead stationary; (3) how to create different business forms, on line forms, and multiple pages of letters and memorandums; (4) how to use the numerous integration features available in word processing known as styles, headers/footers, table of contents, columns, and Word art; (5) how to insert and sort tables in text documents; (6) how to generate bound and unbound reports, table of contents from headings, and apply styles to reports; (7) how to mail merge from a spread sheet, create letters and labels; and (8) how to develop proofreading skills. The student receives three semester hours of credit and the course requires ASIP 2500 Information Processing II as a prerequisite or the equivalent (3500 on line). In addition to the objectives of ASIP 3500 Electronic Information Processing III listed above, the student must also understand how to access the web site from which the course is administered.

The Survey Instrument

The four sections of the survey instrument was designed to describe various characteristics and attitudes of the students enrolled in ASIP 3500 Advanced Information Processing. The Participant Section (Section 1.) was designed to develop a profile of the student asking their gender, age, marital status, children in the home, employment, education background, and distance from East Carolina University. This profile was to be used to predict attitude among the participants in the on line course. The Course Section (Section 2.) was designed to derive information about the student's current enrollment status on campus and off campus, previous on line coursework enrollment, and from where that enrollment originated. The third section, The Technology, surveys students' attitude about what technologies were appropriate for use in the course and the technology used for on line courses in the BVTE Department overall. The fourth section of the survey instrument, The Participants Open Ended Responses, was designed to allow collection of data that might otherwise be overlooked or misinterpreted. The survey was designed as an on-line form and developed for optimum time saving and errors free recording. The data were imported into a database and then exported to a spreadsheet. The responses to the questions with mutually exclusive answers form a field in which each answer was assigned a number, for example the field "Gender" had two responses, each was given a number—Female = 1 and Male = 2.

Instrument Validity

A panel of experts with years of experience in development, delivery, instruction, assessment, and evaluation of on line distance education courses reviewed the researcher-developed instrument for content validity. The panel members reported that each item contained within the instrument was relevant. Further, the instrument was a valid means to obtain data for the study

Instrument Reliability

To assess the reliability of the instrument, pilot studies as well as statistical reliability analyses were used. The first pilot study was conducted in a Business, Vocational, and Technical Education graduate class whose members had distance education experience. The questions were closed-ended with a maximum of five multiple choices per question and ten open ended to allow

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for multiple selections and individual responses. The class responded that the survey was too long, contained ambiguities and poorly worded questions and true responses were not present among the choices, and the overall format of the instrument did not encourage participation. Further, the class reported that some of the questions collected redundant data; and the students reported that some questions were irrelevant to the study. Based on the results of the pilot study, the survey was redesigned to assume an on-line form format using closed-ended questions with combination drop down boxes with mutually exclusive multiple selections used—including a choice when appropriate of "other" and "please elaborate" with a text box provided so that the student may write a response that the researcher may not have anticipated. Statements were refined to include in the survey instrument items to discover participants' attitudes as clearly favorable or clearly unfavorable by using a Likert scale (Sommer and Sommer, 1995). Open-ended questions were used with expanding text boxes so that the participant was not prompted for a short or lengthy response. When multiple answers were necessary, each selection had a check box so that the individual was able to select all that applied to the question.

Using the redesigned form, a second pilot was completed by an undergraduate class currently enrolled in a BVTE on line course. Using the data obtained from the second pilot, a Cronbach alpha coefficient of .48 was calculated. Another meeting was conducted to discuss problems associated with the reliability of the survey instrument. An outcome of the second meeting was the categorization of the survey items into four sections—(1) The Participant; (2) The Course; (3) The Technology; and (4) The Participants' Open Ended Responses,—questions were further grouped according to the type of answer elicited.

Upon the completion of the revised instrument during a third pilot test, the graduate students participating recommended rewording one of the questions for clarity and changing the background color from yellow to white. Using the data collected without the recommended adjustments to the data collection instrument, a Cronbach alpha coefficient of .87 was calculated. According to Cronbach (1951), coefficients above 0.6 are desirable and values above 0.8 are needed for a developed scale. Therefore, the coefficient calculated for the instrument, alpha = .87, is above the value needed for a developed scale or instrument.

Data Analysis and Collection

The null hypothesis-a significant difference will not exist in selected criteria on student performance when a selected course is delivered via distance learning/electronically-was investigated using a priori alpha level of .05. Three criteria were selected to address the null hypothesis; however, only one criterion is reported—the participants' attitude of on-campus/on-line versus off-campus/on-line students toward on line courses and related technologies before enrolling in ASIP 3500 and then the participants' feelings toward on line courses and related technologies upon completion of ASIP. After the data were collected the responses were recorded in a text format where commas delimited each answer. Each record and each data record were assigned a number for administrative purposes. The data were then exported to Microsoft Excel where they were coded and prepared for analysis of selected criteria. To statistically analyze the collected data, a statistical test for categorical data known as the Chi Square Test of Independence was used. Methodological Assumptions for using the Chi Square statistic must be met if resulting inferences are to be valid. Those assumptions, stated in Ary, Jacobs and Razavich (1995), include: 1) Categories were mutually exclusive; each response appeared in only one of the categories in a table; 2) The responses were measured as frequencies; 3) The expected frequency in any cell wasat least 5 when the degrees of freedom equals one, and not less than 5 in 80 percent of the cells when the degrees of freedom were more than one; 4) The observed values with one degree of freedom were corrected for continuity to use the table of critical values of Chi Square; and 5) The responses were independent of one another.

Using a survey research design, students from two sections (on-campus and off-campus) of an on-line advanced information-processing course completed questions to determine student profile, student attitude toward the course, student opinion regarding the method of instructional delivery via technology, and student perceptions of the technology used during instructional delivery. Data were collected from both sections of ASIP 3500—on-campus/on-line and off-campus/on-line on the night of the final examination. Completed surveys were received from 20 of the on-campus/on-line students reflecting a 100 percent return rate and 17 of the off-campus/on-line students reflecting a 68 percent return rate. According to Wunsch (1986), a 60 percent survey return rate constitutes a representative response. Variables such as gender, age, age distribution, employment, hours worked, educational background, distance from ECU, access to a computer and connectivity were selected to develop a profile of the students enrolled in ASIP 3500 on-campus/on-line and off-campus/on-line and the related information is presented in Tables 1-6.

Student Profile

For the item, "Gender," 70 percent of the on-campus and 76 percent of the off-campus students responding to the survey were female and 30 percent of the on-campus and 24 percent of the off-campus students were male. Overall, 73 percent of the students in the on-campus and off-campus sections were female and 27 percent of the on-campus and off-campus students were male (see Table 1).

For the item, "Age," information displayed in Table 2 illustrates that the ages of participants ranged from 20 to over 60. A majority of the participants were between 21 to 45 years of age (see Table 2).

Table 1
Gender

	On-Campus		Off-Campus		Total	
	f	%	f	%	f	%
Female	14	70	13	76	27	73
Male	6	30	4	24	10	27
Total	20	100	17	100	37	100

Table 2
Age

	On-campus		Off-campus		Total	
Years	f	%	f	%	f	%
20 or less	3	15	0	0	3	8
21-25	10	50	3	18	13	35
26-30	2	10	2	12	4	11
31-35	0	0	2	12	2	5
36-40	2	10	3	18	5	14
41-45	2	10	6	35	8	22
46-50	1	5	0	0	1	3
51-55	0	0	1	6	1	3
56-60	0	0	0	0	0	0
over 60	0	0	0	0	0	0
Total	20	100	17	100	37	100

For the item, "Employed while enrolled," 70 percent of the on-campus and 88 percent of the off-campus students responding to the survey indicated that they were employed while enrolled in ASIP 3500 and 30 percent of the on-campus and 12 percent of the off-campus students responding to the survey indicated that they were not employed while enrolled in ASIP 3500. Overall, 78 percent of the on-campus and off-campus students responded that they were employed while enrolled in ASIP 3500 and 22 percent of the students responded that they were not employed while enrolled in ASIP 3500 (see Table 3).

For the item, "Highest degree earned," 85 percent of the on-campus and 12 percent of the off-campus students responding to the survey indicated that they had not earned a degree, 5 percent of the on-campus and 76 percent of the off-campus students responding to the survey indicated that they had earned an Associate's degree, 5 percent of the on-campus and 12 percent of the off-campus students responding to the survey indicated that they had earned a Bachelor's degree, and 5 percent of the on-campus and none of the off-campus students indicated that a Master's degree had been earned. Overall, 51 percent of the students responding to the survey indicated that they had not yet earned a degree, 38 percent of the students responded that they had earned an Associate's degree, 8 percent of the students indicated that they had earned a Bachelor's degree, and 3 percent of those responding had earned a Master's degree (see Table 4).

Table 3
Employed While Enrolled

	On-Campus		Off-Campus		Total	
	f	%	f	%	f	%
Yes	14	70	15	88	29	78
No	6	30	2	12	8	22
Total	20	100	17	100	37	100

Table 4
Education Background

	On-campus		Off-campus		Total	
	f	%	F	%	f	%
No degree	17	85	2	12	19	51
Associate	1	5	13	76	14	38
Bachelor	1	5	2	12	3	8
Master	1	5	0	0	1	3
Doctorate	0	0	0	0	0	0
Total	20	100	17	100	37	100

For the item, "how far would you travel if you attended ASIP 3500 classes on campus?," 65 percent of the on-campus students and 6 percent of the off-campus students responding to the survey reported that they were less than 5 miles from campus, 15 percent of the on-campus and 41 percent of the off-campus students responding to the survey reported that they were 5 to 30 miles from campus, 20 percent of the on-campus and 41 percent of the off-campus students reported that they were 31 to 90 miles from campus, and none of the on-campus students and 12 percent of the off-campus students reported that they were more than 90 miles from campus. Overall, 38 percent of the students responding to the survey were less than 5 miles from campus, 27 percent of the students were 5 to 30 miles from campus, 30 percent of the students were 31 to 90 miles from campus, and 5 percent of the students were over 90 miles from campus (see Table 5).

For the item, "Where did you have the easiest or most ready access to a computer and the Internet?," 65 percent of the on-campus and 94 percent of the off-campus students responding to the survey accessed ASIP 3500 from home, 35 percent of the on-line students accessed ASIP 3500 from an ECU computer lab and 6 percent of the off-campus students accessed ASIP 3500 from a community college computer lab. Overall, 78 percent of the students on-campus and off-campus responding to the survey accessed ASIP 3500 from home, 19 percent accessed ASIP 3500 from a computer lab at ECU, and 3 percent accessed ASIP from a computer lab at a community college (see Table 6).

Table 5
How Far Would Students Travel if They Attended the Class On Campus.

	On-campus		Off-campus		Total	
Distance	f	%	f	%	f	%
less than 5 miles	13	65	1	6	14	38
5-30 miles	3	15	7	41	10	27
31-90 miles	4	20	7	41	11	30
more than 90 miles	0	0	2	12	2	5
Total	20	100	17	100	37	100

For the item, "Upon completion of ASIP 3500, what are your feelings about on-line courses and related technologies?," 95 percent of the on-campus and 88 percent of the off-campus students who responded to the survey indicated a positive attitude toward on-line courses and related technologies, none of the on-campus and 6 percent of the off-campus students indicated a negative attitude, and 5 percent of the on-campus and 6 percent of the off-campus students expressed a neutral attitude (see Table 7). A Chi Square value of 3.50501E with 2 degrees of freedom (p=1) was calculated which was not significant at an a priori alpha level of .05. Therefore, students' attitude toward on-line courses and related technologies used was not statistically significant among the students responding to the survey.

Table 6
Access To a Computer and Internet

Location	On-Campus f	On-Campus %	Off-Campus f	Off-Campus %	Total f	Total %
At home	13	65	16	94	29	78
At work	0	0	0	0	0	0
Friend/relative	0	0	0	0	0	0
Computer Lab at ECU	7	35	0	0	7	19
Computer lab at community college	0	0	1	6	1	3
Total	20	100	17	100	37	100

Table 7
Students' Attitude Toward On-line Courses and Related Technologies After Completion of ASIP 3500

	On-Campus f	On-Campus %	Off-Campus f	Off-Campus %	Total f	Total %
Observed						
Positive	19	95	15	88	34	92
Negative	0	0	1	6	1	3
Neutral	1	5	1	6	2	5
Total	20	100	17	100	37	100
Expected						
Positive	6.66	33.3	5.66	33.3	12.3	33.3
Negative	6.66	33.3	5.66	33.3	12.3	33.3
Neutral	6.66	33.3	5.66	33.3	12.3	33.3
Total	20	100	17	100	37	100

X^2 (2,N = 37) = 3.50501E-13, p=1

Conclusions

The following conclusions were drawn:

1. Students enrolled in the off-campus course completed multiple surveys, which impacted the results.

The researcher was unaware that the students enrolled in the course off-campus had completed multiple surveys prior to the night of the final examination. Therefore, it is concluded that the 70 percent response rate from the students in the off-campus section was due to the impact of having to respond to multiple surveys. If the researcher had been aware of the multiple surveys, a t-test would have been used to compare the survey responses from the off-campus section that were returned the night of the final exam to the late responses that were returned during the days after the final exam.

2. Students' attitude toward on-line courses and related technologies before enrolling in the on-line course and the students' attitude after completing the on-line course was positive.

There was no statistically significant difference in attitude between the two sections toward on-line courses and related technologies before beginning the on-line course and after completing the on-line course. In practical terms, overall the students' attitude toward on-line courses and related technologies before enrolling in the course and after completing the on-line course was positive. While it may be concluded that on-line course delivery does not impact student attitude, it is noted that a higher percent of students from both sections reported a positive attitude toward on-line courses after completing the course.

Implications

The results of this study have implications for distance education students, instructors, administrators, and higher education institutions using on-line courses:

1. Distance education is in the educational forefront these days and is changing the ways in which universities teach today. Learning no longer occurs in a traditional classroom but in a classroom characterized by the fact that time and space separate students and teachers. As a result, many distance

learners find themselves often being surveyed for their attitude about the technology, the course in which they are enrolled, and their performance by educators, researchers, and vendors of educational software. According to Cronbach (1983) evaluation is a continuing process-"what variables deserve close attention will be discovered as the fieldwork proceeds"(p 8). Evaluation must become an integral part of the virtual classroom, ongoing, with formative and summative evaluations. Educators using a survey instrument, such as the one developed for this study, as a diagnostic tool will identify potential problems that might hinder learning and academic integrity. In addition to the survey instrument, the educator might consider e-mail as a means of evaluation where course participants discuss various aspects of the course. It is recommended that teachers meet face-to-face with students at a midway point in the on-line course so that students may reflect and/or bring constructive or crucial criticism to light, especially in developing distance education programs.

2. Other means of evaluation, such as testing for evidence of critical thinking as a determinant for learning outcomes and student achievement should be considered by researchers of on-line courses. Evaluation techniques such as student portfolios, measured by a grading matrix or rubric, would let the instructor know that the student has mastered the objectives of the course. In addition, a follow-up evaluation of students who move to the next course level of learning following the course from which they have just exited would also show the evaluators that higher levels of learning (application, analysis, synthesis, and evaluation) has occurred. It is possible, as Neal (1999) predicted, that research studies might then report statistically significant differences when evaluating courses which are taught on-line.

3. Researchers in their evaluation of on-line courses might consider attrition rates of on-line students. For example, determine when the attrition occurs and determine by means of an exit questionnaire why students do not continue. Use collected data to assess means of recruiting students into on-line programs and then assuring their retention. In addition, sampled attrition might impact the results of a study of attitude and perception of on-line courses.

Summary

Technology is rapidly moving from simply providing a source of entertainment to a means of educating the masses. Hundreds of studies conducted over the 20th Century have compared delivering education in traditional settings and to settings provided by the then- possible technology. As reported by Russell (1999) no significant difference in learning occurs when the method and technologies used are appropriate to the instructional tasks and when the student is focused on the content of the course and not sidetracked by the technology. As education moves into the 21st Century, fixed timetables of classroom lectures will not be the preferred mode of learning. As positive answers to the research questions about on-line education accumulate and with ongoing evaluation used as a means of improving online courses, perhaps more educators will agree that teaching and studying at a distance is an effective educational strategy.

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The Computer Applications Software Skills Students Bring to College Level Introductory Computer Classes

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Abstract

A survey was conducted in the 1998 fall semester that was designed to investigate the perceived skill level differences of college students enrolled in introductory computer applications classes. College students enrolled in introudction to computer applications classes made up the population for this study. The purposive sample came from six universities in five states.

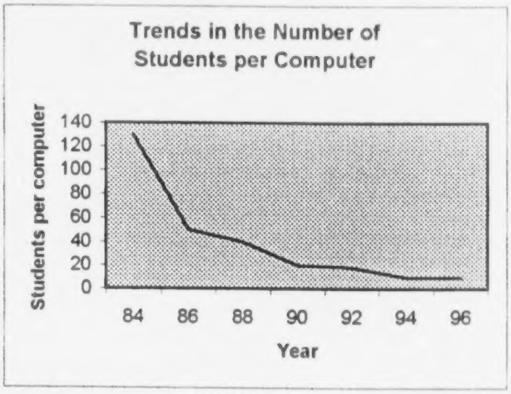
The study concluded that vast differences exist in the perceived skill levels in introductory computer applications classes. Recommendations based on the study included: instructors of introductory computer applciations software courses should consider the skill level differences of their students when choosing instructional methods and allocating time for instruction, instructors should take measures to reduce the amount of redundancies in programs, and encourage studnets to take introductory computer softwrae applications classes early in their programs.

After production of desktop computers began in the 1980s, business and industry quickly incorporated computer applications technolgy into their methods of operation. Rcognizing this change, business education programs answered the call for employees with computer applciations skills and began delivering this instruction to students. Computer applications classes have been very successful over the last decade based upon student popularity and enrollment. Business and business education programs often achieved enrollment stability and often growth by offering these classes.

The success of computer applications classes was at its height when the popularity of desktop computer application programs was in its infancy and growing. "Today the personal computer (PC) is a fixture in most business organizations, large and small" (Alexander & Echternacht, 1990, p. 48). According to Daggett and Jaffarian (1990), computer technology has changed the nature of the workplace and the skills required of the worker. Responsibilities such as data entry and document formation historically have been viewed as support activities; in the 1990s these responsibilities are becoming primary roles in the business workplace. Daggett and Jaffarian further contended that word processing, data processing, reprographics, and communications skills have become basic skills at every level.

Desktop computers and applications software have become more available over the past fifteen years. "In recent years high school business programs have made substantial additions to their offerings. The focus is still on preparation for work immediately following graduation from high school, and major attention is given to the development of computer skills" (Hall, 1990, p. 5). The following graph illustrates the growth in the number of students per computer in classrooms.

Figure 1



(Coley & Engel, 1997)

Computers have been made available to students at educational institutions at all age and grade levels. From preschool programs to universities, computers have been made available by way of computer labs or individual computer stations. Students often have access to computers in their homes and their places of work. The widespread availability of computers has allowed people to learn a great deal about them through their interaction for work, entertainment, obtaining information, and investigation or research activities.

Educational institutions are making computers available at all levels and in a variety of programs. In the past, business and business education programs have enjoyed being the predominant source for computer instruction in many educational institutions. Today, students receive different levels of computer instruction from virtually all educational areas. Pre-school children are learning the alphabet on computers. History teachers are incorporating electronic databases in their instruction. Journalism classes offer instruction and experience with desktop publishing applications. Science students are creating spectacular charts and graphs with graphing programs and electronic spreadsheets.

Traditionally, business and business education programs have offered instruction in word processing, electronic spreadsheets, electronic databases, and desktop publishing programs. In recent years these programs have also incorporated presentation software applications and Internet skills instruction into their curricula. When considering the computer availability and the vast sources of software instruction that have been made available to students, there is little surprise that students enter business and business education computer applications classes with very different skill levels.

Statement of the Problem

Students are receiving computer applications instruction of many types, at all educational levels, and from a variety of sources. This may lead to redundancies in many individuals' life-long curriculum. Often students take computer applications courses in middle and secondary business programs. Those students who attend post-secondary institutions may repeat instruction on the same content (computer applications skills). University, college and/or departmental requirements may force students to repeat the same computer instruction. Frequently, when a student must repeat their computer applications instruction, this instruction is on the same skill level. This skill level of instruction is frequently at the beginner to intermediate level. Repeating instruction often leads to feelings of frustration and wasted time by students. The problem this study addressed was to determine the perceived computer applications skill levels of students entering "introduction to computer applications" type classes at four-year colleges and universities.

Purpose of the Study

Business educators are facing an important challenge. As students experience greater diversified computer applications, more frequent interactions with computers, and increased availability of instruction, the skill levels of students attending business and business education computer applications classes in colleges and universities are becoming more varied. The challenge for business educators is to meet the computer applications instructional needs of their students, while not enforcing numerous redundancies. "Teacher educators should provide leadership in conducting and applying research which assumes that instruction is based on valid information, new concepts, and technological advances" (Policies Commission for Business and Economic Education, 1993). If students in computer software applications classes are to be prepared appropriately, information relative to the types of software that should be taught and at what skill levels instruction should be focused, must be analyzed systematically.

The primary research objective of this study was to determine the computer applications software skills students perceive they possess who take "introduction to computer applications" type classes at four-year colleges and universities. Further, this study also sought to determine if college students are taking other computer applications classes prior to the classes designed to be introductory in nature. This study also investigated the college grade level in which students are taking introductory computer applications classes.

Related Literature

The importance of computer applications instructions is evident in business education publications. The National Standards for Business Education (1995) states:

> Technology, including computer technology, should be viewed and taught as a tool for problem solving and decision making. Students should be encouraged to analyze, synthesize, and evaluate situations at home, school, or work, and apply technology to complete tasks efficiently and effectively. It is the student's ability to apply technological concepts that are of lasting value rather than mastery of specific hardware or software skills and knowledge. (p. 91)

McEwen (1996) reported that the literature focusing on microcomputer applications contains very little research information on effective teaching strategies. She reported that although the field is flooded with textbooks concerning microcomputer applications, very few address appropriate instructional methods. According to McEwen, demonstrations, simulations, and self-paced learning are effective methodologies for delivering microcomputer applications instruction. The study further reported that the largest percentage of computer applications instructors learned computer applications by way of "individual" or self-taught instruction. However, those instructors chose to use the "teacher centered" method in which their students are given instructions systematically in their classes. The instructors used demonstrations most frequently to model the skills being taught. Lecture, followed by drill and practice, was the least used method.

According to Mundrake (1998, p. 40), "Hands-on activities that engage students in the learning process are an important aspect of any computer class." This report encouraged instructors to develop a variety of student projects that reflects the hardware and software available for their computer based classes.

Pan (1991) compared students' learning achievements in word processing resulting from the direct instruction method and the guided exploration method. The study sought to determine if interaction existed between the instructional methods on variables such as typing speed, attitudes toward computers, effectiveness with computers, cognitive styles, and learning preferences about the instructional teaching methods. Forty-five adult beginning word processing users were randomly assigned to nine small classes. Five of the classes were taught using a guided exploration approach; four were taught using direct instruction. The direct instruction class received step-by-step instructions for performing specific word processing tasks. The guided exploration group received general demonstrations and were provided limited help to learn specific word processing tasks.

Results of the Pan study (1991) showed significant differences in achievement between the two instructional groups in favor of the guided exploration method. Significant interaction effects were revealed between cognitive learning styles, and field dependent students were found to benefit more from the guided exploration method than from the direct instruction method. No significant differences were found between the two study groups in the areas of computer efficacy scores, attitude scores, gender, learning preference scores, basic or advanced levels of word processing tasks, and typing scores.

The purpose of a study conducted by Everett and Drapeau (1994) was to determine the instructional methods two panels of experts perceived as being effective to develop and train the workforce. One panel represented business and industry trainers and the other panel represented business educators. The study additionally sought to find out from business educators what instructional methods were perceived as effective to deliver instruction. Of the 14 delivery methods included in the study, only lecture and role playing were not perceived as being effective by the panel of business and industry trainers. Everett and Drapeau also compared the perceptions of business educators regarding the effectiveness of the training methods. Business educators perceived lecture as effective and was the only instructional method used frequently.

An Educational Testing Service (ETS) report by Coley and Engel (1997) addressed the current status of computer technology in the classroom. This report stated that "research generally agrees that drill-and-practice forms of computer-assisted instruction are effective in producing achievement gains in students" (p. 6).

Methodology

A descriptive research design using the survey method was used to gather data for this study. Three university professors with experience teaching computer applications classes reviewed the survey instrument for content validity. The instrument consisted of multiple choice and likert-type questions. The survey questions concentrated on determining the software applications of which students were familiar. Further, the survey inquired as to what skill levels students perceived they currently possessed. The survey instrument was distributed to the cooperating instructors via E-mail during the 1998 fall semester. College students enrolled in introduction to computer applications classes made up the population for this study. The purposive sample for this study came from six universities in five states. Descriptive statistics were applied to the results of the survey to analyze the data.

Findings

The sample of the study consisted of 518 students enrolled in intact sections of undergraduate computer software applications courses. These courses were designed to be introductory and were conducted at Eastern Kentucky University, Indiana University at Pennsylvania, Southern Illinois University-Carbondale, The University of Southern Mississippi-Hattiesburg, The University of Southern Mississippi-Gulf Coast, and University of Missouri-Columbia. Descriptive data regarding the subjects that returned answers to demographic questions are summarized in Table 1 and Table 2.

Table 1
Descriptive Data for Participants: Student Classifications

Student Classification	Number	%
Freshman	170	34.0
Sophomore	141	28.2
Junior	100	20.0
Senior	87	17.4
Graduate	2	0.4

Table 2
Descriptive Data for Participants: Age Groups

Age Group	Number	%
18-21	362	73.1
22-24	70	14.1
25-above	63	12.7

Participants were asked if they had taken a computer applications class after high school. They reported that 167 of the 494 (34%) had taken a computer applications class after high school. Three hundred twenty-seven (66%) reported they had not taken a computer class after high school. On hundred eighty-nine (38%) of the respondents reported that they were currently at the junior, senior, or graduate level in college.

Participants were asked to report the skill level they perceived that they possessed at the beginning of the introductory computer applications course. The following table reflects their responses.

Thirty-one percent of the participants perceived that they possessed word processing skills at the "expert" level. Sixty-two percent perceived that they possessed "intermediate" word processing skills. Therefore, over 92% of all the participants perceived their word processing skills to be higher than "novice."

Table 3
Perceived Skill Level of Participants

Computer Application	Novice		Intermediate		Expert	
	No.	%	No.	%	No.	%
Word Processing	38	7.7	305	61.6	152	30.7
Spreadsheet	199	39.3	283	55.9	24	4.7
Database	359	70.5	138	27.1	12	2.4
Presentation Software	317	61.2	158	30.5	43	8.3
Internet Software	45	9.1	296	59.4	157	31.5
Desktop Publishing	293	58.8	171	34.3	34	6.8

When focussing on spreadsheet skills, 5% of the participants reported that they perceived their skill level to be in the "expert" range. Fifty-six percent perceived that they possessed an "intermediate" spreadsheet skill level, and 39% percent reported having a "novice" spreadsheet skill level.

Two percent of the participants perceived their database skills to be in the "expert" range; 27% reported their database skills to be "intermediate." Seventy-one percent consider themselves to have novice skills concerning databases.

Eight percent of the respondents reported that they possessed an "expert" skill level with presentation software. Thirty-one percent reported that they possessed an "intermediate" presentation software skill level. Sixty-one percent of the participants perceived their presentation software skills to be at the "novice" level.

When asked about Internet software skills, 32% of the respondents reported their skills were at the "expert" level, and 59% reporteded their skills were at the "intermediate" level. Only 9% reported that their skills were at the "novice" level when using Internet software.

Seven percent of the respondents perceived their desktop publishing software skills were at the "expert" level. Thirty-four percent responded that they were at the "intermediate" desktop publishing software skill level; 59% perceived their desktop publishing software skills were at the "novice" level.

Conclusions

Assuming the data collected is reliable, valid, and representative of collegiate students, the following conclusions are drawn. There are vast differences in the perceived skill levels of students in introductory computer applications classes. The majority (greater then 50%) of the students reported having an intermediate or expert level of skills in three different computer applications. Ninety-three percent of the students perceived their word processing skills to be at the intermediate level or higher. Ninety-one percent of the students perceived their Internet software skills to be at the intermediate level or higher. And, sixty-one percent of the respondents reported their spreadsheet skills to be at the intermediate level or higher.

The majority (greater than 50%) of the respondents reported their skill levels to be at the novice level in three different computer applications. Seventy-one percent perceived their database skills to be at the novice level. Sixty-one percent reported they possessed novice skills with presentation software applications. In addition, 59% reported possessing novice-level desktop publishing software skills.

Approximately one-third (34%) of the students had taken another computer applications class after high school. Sixty-six percent reported they had not taken another computer class after high school.

Over one-third (38%) of the students reported that they were currently at a grade level higher than "sophomore" in college. Thirty-four percent were freshman, 28% were sophomores, 20% were juniors, 17% were seniors, and one percent was graduates.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are offered:

1. Additional studies should be conducted to determine the actual (not perceived) skill levels students possess when entering introduction to computer type classes at the college level.
2. Considering the vast differences in skill levels students perceive they possess, instructors should consider using instructional methods that allow students to progress at different rates and to different competency levels. These methods could allow students with superior word processing, Internet, and spreadsheet skills, to advance to higher levels or concentrate on weaknesses instead of repeating the instruction devoted to skills they already possess. Using student self-paced instructional methods may allow instructors more time to facilitate students who possess fewer or lower levels of computer applications skills.

3. Instructors should consider the differences of their students' skill levels (both perceived and actual) when making decisions about the time allotted to each type of computer applications. Frequently, instructors allow equal amounts of time for each type of application. The results of this study suggest that the applications of desktop publishing, presentation software, and databases require more instructional time than word processing, spreadsheets, and Internet skills.

4. To reduce redundancies in a student's program of study, instructors should consider implementing "test out" procedures which will allow students who demonstrate the competencies covered by the class to receive credit without repeating instruction of the skills the students already possess.

5. Measures should be taken to ensure that introductory computer applications classes are taken early in college students' programs of study. Designating the "introduction to computer applications" type classes as prerequisites and also designating them as freshman or sophomore level courses may encourage students to take them early in their program.

6. There is no substitute for effective advisement. Therefore, advisors should encourage students to take introductory computer applications classes as early as possible to facilitate their acquisition of in depth computer applications skills and to complement the other course work that computer skills might enhance.

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Computer Competencies of High School Students

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Abstract

This study measured computer-related competencies of 12th-grade students and relationships between competencies and selected characteristics. A stratified random sample of 975 students was included in the study. An objective test/questionnaire was used to assess students' computer-related competencies and report gender, gpa, college plans, computer access, attitudes, and software used. Mean scores indicate that students do not have a complete understanding of computer systems, software applications, and ethical uses of computers. Significant differences were found in scores among the effects of gender, school size, computer access, and college plans. A majority of students have taken keyboarding or word processing courses; however, less than 25% reported they had taken computer applications, programming, desktop publishing, or computer-aided design courses.

Introduction

In 1983 the National Commission on Excellence in Education recommended computer literacy as a basic skill requirement for high school graduation. Since then educational programs have become heavily vested in the development of computer- and technology-literate students. Computer-related curricula have been created to teach general and specific computer knowledge, skills, and attitudes (Pelgrum & Plomp, 1993) to students in elementary, secondary, and postsecondary programs. These instructional plans have been delivered as units of instruction infused in general education courses, as independent computer programming and application courses, and as fully integrated computer- and technology-based programs (Becker, 1993; Hadley and Sheingold, 1993; Heywood-Everett, 1991; Pelgrum & Plomp, 1993).

While there is widespread agreement that fundamental computer-related knowledge, skills, and attitudes are needed by students at all levels, there is limited research to substantiate that students, particularly secondary students, are attaining fundamental computer-related competencies. Relatively few studies have been conducted to assess student attainment of the computer knowledge, skills, and attitudes needed to be computer competent (Furst-Bowe, Boger, Franklin, McIntyre, Polansky, & Schlough, 1995-1996). This occurrence may be partially explained by the dynamic nature of computer-related technologies, thus causing the definition and scope of computer literacy to change and be measured in many different ways (Kay, 1992; Hess, 1994; Hannum, 1991; Haigh, 1985).

Although limited research exists concerning the assessment of computer-related competencies, substantial research does exist concerning computer-related curriculum components and underlying characteristics that shape computer-related knowledge, skills and attitudes. In a recent review of literature, the most prevalent components found included computer operating systems, computer uses in society, and computer applications. Student characteristics frequently identified in the literature included gender, prior use of computers, access to computers, and attitudes toward computer use.

Purpose of the Study

The purpose of this study was to identify and measure computer-related competencies of students attending public high schools in a western region state. A secondary purpose was to describe the relationships between students' computer-related competencies and selected demographic characteristics. Characteristics measured included gender; cumulative grade point average; college plans; access to and use of computers at school, home, and work; attitudes about using computers; product names of software most frequently used; school size; and student-to-computer ratios in schools.

Specifically, the following research questions were answered:

1. What computer-related competencies do high school students have in the computer-related content areas of (a) basic components of the computer, (b) ethical uses of computers in society, (c) operating systems, (d) word processing, (e) spreadsheets, (f) databases, (g) multimedia, and (h) telecommunications?
2. Are there differences in the computer-related competencies of high school students when grouped by gender, college plans, school size, or computer access outside of school?

3. Are there relationships between students' computer-related competencies and the amount of computer instruction they receive, their attitudes about using computers, their academic achievement, or the availability of computers at their schools?

4. What types of computer-related experiences do students receive in high school?

Research Procedures

A stratified sample of 975 students from 16 small-, medium-, and large-sized high schools were included in this study. A panel of experts comprised of educators and business professionals knowledgeable in computer-related technology provided direction concerning the computer-related competencies identified and the instruments used in this study. The instruments included an objective test designed to assess students' computer-related competencies and a questionnaire designed to identify student characteristics.

Responses were collected from 975 students; 49% of the participants were female. The majority of students, 76.6%, plan to attend college, and 75.7% of the students reported having grade point averages of 3.0 or greater.

Findings

The findings of this study have been organized as follows: Measurement of Competencies, Competency Differences Among Student Groups, Competencies and Student Characteristics, and Computer-Related Experiences of Students.

Measurement of Competencies

Scores on the objective test were used to measure students' computer-related competencies. Test score findings are summarized as follows:

1. The mean composite test score was 45.6% with the majority of students scoring between 31% and 60%. Less than 6% of the students in the sample scored above 70%.

2. Mean scores for the test sections ranged from a low of 36.4% in telecommunications to a high of 53.8% in basic components of computers.

Competency Differences Among Student Groups

Analysis of variance was used to measure differences in test scores among students grouped by gender, school size, computer access, and college plans.

1. Students attending small and large schools scored higher than their counterparts in medium-sized schools. Mean composite test scores ranged from 39.7% (medium-sized schools) to 45.8% (small schools) and 48.1% (large schools).

2. Students with computer access outside of school (mean scores = 47%) scored higher than students without outside computer access (mean scores = 39.8%).

3. Students planning to attend college scored higher than (mean scores = 46.9%) students with no college plans (mean scores = 41.2%).

Competencies and Student Characteristics

Pearson Product Moment Correlation analysis was used to measure the relationships among test scores and computer instruction, attitudes, academic achievement, and student-to-computer ratios in schools.

1. The correlation analysis of the relationship between composite test scores and the amount of computer instruction received was calculated using three measures: number of computer instruction courses taken, types of computer instruction courses taken, and frequency of hands-on use of computers in computer instruction courses. Frequency of hands-on use resulted in the highest correlation, r = .323, followed by number of courses taken, r = .195, and types of courses taken, r = .153.

2. Responses to three attitudinal statements were used to measure the relationships between test scores and students' attitudes about using computers. The statement "I feel confident in my computer-related knowledge and skill resulted in the highest correlation, r = .279. The statements "I like to do school work that involves using a computer" and "I like using computers" resulted in similar correlations, r = .255 and .242, respectively.

3. The relationship between test scores and students' self-reported grade point averages resulted in a correlation coefficient of r = .217.

While each of these associations may be of low magnitude, it appears that students with greater knowledge and skill in using computers as measured by test scores are more likely to enjoy using computers, like using computers for school work, and have greater confidence in their computer skills. Stated differently, the statistical association suggests that as students become more interested in using computers in general or for school work, and as they develop greater confidence in their skills, test scores in computer-related content areas may also rise.

Computer-Related Experiences of Students

Frequency counts were used to measure student responses to survey questions concerning students' access to and use of computers at school, home, and work; their attitudes about using computers; and the types of computer-related learning activities they had participated in throughout their high school education.

1. Approximately one half of the students reported using a computer during regular school hours for at least one hour daily. Word processing (57.7% of students surveyed), Internet (38.7%) and games (37.1%) were reported as the most frequently used software applications during regular school hours. Spreadsheets, multimedia, and e-mail applications were reported by less than 24% of the students. The majority of students, 81%, indicated access to computers at home or work, or a combination of the two. The two most frequently used software programs at home were word processing and games. Word processing was also reported as frequently used by those with computer access at work.

2. A majority of students (81.3%) reported that they enjoyed using computers, while 70.9% indicated that they enjoyed doing school work with computers. About two thirds of the students indicated confidence in their computer skills. When asked to identify individuals who have been most helpful to them in learning to use a computer, 29% indicated a combination of individuals, 25.9% indicated they were self taught, and 20.6% reported teachers as most helpful.

3. About 67% of the students reported taking courses in keyboarding and word processing, while less than 25% of the students reported taking courses in computer applications, programming, desktop publishing and other types of computer instruction. Of the students taking computer instruction courses, only 51.7% reported using the computer on a daily basis. Computer use in general education courses was most frequently reported in humanities courses (43%) and social studies courses (36.5%) and least in science courses (25%) and mathematics courses (16.3%). Computer use in elective courses was reported by less than 26% of the respondents. Writing and research activities were the most common computer experiences in humanities, social studies, science, and elective courses. Likewise, word processing software was the most frequently used application in these courses. Graphing and games were the most common computer experiences in mathematics courses with games software being the most frequently used application. Less than half of the students indicated that they were required to use a computer as a learning tool outside of regular class time for any of their courses.

4. The most frequently reported operating system software was Microsoft Windows (versions 95 or newer); 35% of the students indicated such use. The most frequently reported word processing programs were Word Perfect and Word (all versions); 47% of the students reported such use. About 43% of the students did not use, did not know, or did not report their use of operating system or word processing software. More than 65% of the students did not use, did not know, or did not report using spreadsheet, database, multimedia, or Internet software.

Conclusions

The conclusions of this study were derived from analysis of the objective test scores and data collected from responses on the questionnaire.

Measurement of Competencies

The composite scores on the objective test indicate that students do not have a complete understanding of computer systems, software applications, and ethical uses of computers. Students correctly answered an average of 46% of the questions regarding computer-related competencies. These results are similar to those reported in other studies about computer-related skills of incoming post-secondary students; mean scores ranged from 37% to 53% among five different studies (Boettner, 1991; Brock, F. J., Thomsen, W. E., & Kohl, J. P., 1992; Hilton, T. S. E., LaBonty, D., Bartholome, L. W., & Stocker, H. R., 1993; Szajna, 1994; Van Holzen, 1993). Assessment studies conducted at the elementary/ secondary level revealed similar results as well (Fetler, 1985; Gabriel 1985a, 1985b; Martinez & Mead, 1988).

Competency Differences Among Student Groups

Statistically significant differences were found on mean composite test scores among students attending small-, medium-, and large-sized schools; between students with computer access outside of school and those with access in school only; and between college-bound students and non-college-bound students. No significant differences were found on mean composite test scores of males and females; however, males did outperform females on the operating systems test section. This result supports the contention that computer-related competencies do vary among different groups of students.

Competencies and Student Characteristics

As evidenced by the correlation analysis, there is a positive relationship between test scores on computer-related competencies and the amount of computer-related instruction students receive. It is concluded that there is a degree of association between test scores and amount of computer instruction as measured by (a) number of courses, (b) types of courses, and (c) frequency of hands-on computer access. While these associations were of low magnitude, it was concluded that students with more computer instruction may have somewhat higher test scores.

The conclusion was also made that there is a positive relationship between test scores on computer-related competencies and students' attitudes about using computers, doing school work with computers, and having confidence in their own computer knowledge and skill. Again, from a substantive point of view, the low magnitude of the relationships indicates a weak association, but as a practical matter, it appears that students with greater knowledge and skill in using computers as measured by test scores are more likely to enjoy using computers, like using computers for school work, and have greater confidence in their computer skills.

A significant relationship was observed between test scores and academic achievement as measured by grade point averages. The low magnitude of the relationship suggests a lack of practical significance. This result may be explained, in part, by the fact that a majority of the students reported grade point averages in excess of 3.0; thus, little variation was observed in this variable, while substantial variation was observed in test scores.

Computer-Related Experiences of Students

The findings regarding instructional use of computers indicate that most students have had limited formal instruction about computer systems, ethical uses of computers, and computer application software. While a majority of the students are receiving some introductory instruction about computers and word processing software by taking keyboarding (54.7%) or word processing courses (45.1%), less than 25% receive instruction about other computer-related content areas typically taught in computer applications courses. Even fewer students (less than 20%) receive instruction in advanced computer courses such as programming, desktop publishing, or other courses such as computer-aided design.

In their general education and elective courses, students are using computers on an occasional to infrequent basis. They most frequently use computers in humanities and social studies courses for writing and research activities using word processing and Internet software. Less than one third of the students reported that they were required to use a computer outside of regular class time.

These findings would seem to suggest that students acquire much of their understanding of computer-related competencies through self-taught applications and other repetitive uses of software programs such as word processing, Internet, and games. A large number of students (25.9%) reported that their computer knowledge is self-obtained. A similar number of students (29%) indicated that "several individuals" (friends, family etc.) were most helpful in learning about computers. Less than one fourth of the students identified their teachers as most helpful in learning about computers.

The predominance of word processing as part of elementary and secondary instruction was noted in the review of other studies (Hadley and Sheingold, 1993) and (Mergendoller and Sacks, 1995). Post-secondary instructional use studies such those conducted by Lee, Pliskin, and Kahn (1994) found that one third of the students surveyed had not used a computer in high school and another one third had never received any type of formal computer instruction. Larson and Smith (1994) reported a higher percentage as having some computer experience with 90% citing word processing as their primary skill. The findings of the present study are similar in that a large number of students are acquiring their computer-related competencies through limited computer instruction and limited computer applications.
About 35% of the students reported using Windows 95 or newer operating system software; 32% reported Word or Word Perfect and Netscape Navigator as the most frequently used word processing and Internet browser software. However, more than 40% of the students could not identify either an operating system or word processing program, and 54% could not identify an Internet browser. More than 65% of the students could not identify spreadsheet, database, or multimedia software. While students appear to have access to and use of current software applications, the majority have a limited understanding or knowledge about the software they are using. Access alone does not lead to understanding of the full range of commands and operational features contained in most computer application software. As noted previously, access and repetitive use only accounts for a part of the success of students in learning computer-related competencies.

Recommendations

The following recommendations are based on test scores, student responses to survey questions, and analytical review of the findings. These recommendations concern the development of basic computer competencies of high school students, the assurance that quality computer-related learning opportunities be provided to all students, and the enhancement of the computer-related educational experiences that high school students receive throughout their programs of study.

Ensuring Development of Computer-Related Competencies

1. Students graduating from public high schools need to be prepared with computer-related competencies adequate for entry into work, college, and other social environments. High school information technology curricula should include instruction in basic components of computer systems and be supported with activities that cultivate an understanding and appreciation for how computers are used in society. Instructional units on the use of operating system software, word processing, spreadsheets, and database programs should be fundamental to the information technology curricula. Multimedia and telecommunication software and hardware should also be integrated. Students ought to learn about their rights and responsibilities as users of computer and information technology. Instruction concerning the purchase and maintenance of personal computer software and hardware systems should be an integral component of the information technologies curriculum.

2. It is also suggested that computer-related instructional courses provide daily instruction with regular hands-on use of the computer. Students should have access to these courses early in their high school program and be encouraged to upgrade their computer-related skills and knowledge through additional training workshops and courses throughout their high school program in order to keep current as new technologies develop.

3. While it is evident that many educational entities are in the process of developing and implementing information technologies curriculum standards, little evidence was found concerning assessment of students' achievement of computer-related competencies. Therefore, it is recommended that state agencies, school districts, and individual schools continue development and implementation of assessment plans for the information technologies curriculum. Evaluation of the currency and relevancy of curriculum standards, appropriate implementation and assessment procedures, and adherence to state and national standards by individual schools and districts should be ongoing.

Promoting Equity in Computer-Related Instruction

1. Since significant differences were found in test scores among the main effects of school size, computer access outside of school, and students' plans to attend college, it is recommended that educators continue to examine and evaluate characteristics that influence the availability, delivery, and use of information technology education among different groups of students.

2. It is recommended that high school counselors and teachers evaluate recruitment practices, graduation requirements, teaching strategies, and other related factors that may influence the computer instruction available and provided to diverse groups of students to ensure all students are graduating with fundamental computer-related competencies appropriate for entry into a variety of work and learning environments.

3. Since significant relationships were found between students' computer-related competencies and the amount of computer instruction received, attitudes about using computers, and academic achievement, it is recommended that educators continue to examine and evaluate the effects that students' individual characteristics have on the development of their computer-related competencies.

Enhancing Computer-Related Experiences of Students Across All Disciplines

1. It is recommended that school, district, and state educational information technology plans provide for ongoing in-service and training opportunities that enable teachers from across all disciplines to move from teacher-centered to learner-centered instructional curricula. Attention to the self-efficacy of teachers' understanding and knowledge of technology should be a primary concern in planning computer and information technology training programs. Teachers must feel they have adequate training and technical support in using computers if they are to successfully integrate technology into their curricula in appropriate and meaningful ways.

2. As evidenced by the student questionnaire, students use computers during regular class hours in general education and elective courses on an occasional to infrequent basis. It was also found that fewer than 34 percent of the students reported that they were required to use a computer outside of regular class time for any one discipline. The assumption might be made that the limited use is a result of limited access; however, it was also found that all of the schools surveyed have at least one open lab for student use, and the majority of students have access to a computer at home or work. If the computer and information technologies are to be fully integrated into the curricula as a learning tool, teachers must begin thinking of computer skills that can be taught and used in all disciplines rather than as isolated skills used in specific courses. As computers and related technology-based tools become more economical and portable, these tools should become as natural as a textbook, pencil, and notebook for solving authentic problems related to real-world issues.

3. As evidenced by the student questionnaire, the predominant use of computers across all disciplines involved writing and research activities using word processing and Internet software. As teachers across all general education disciplines develop greater personal knowledge and skill in using computer and information technologies, they should be encouraged to integrate appropriate activities and software such as teacher and student presentations using computer presentation and multimedia software, data analysis and graphing using spreadsheets and databases, and research and correspondence activities using Internet, e-mail, and online library catalog systems software.

4. It is recommended that educators provide students with learning opportunities that promote access to and use of computers in a variety of settings. Opportunities such as extra-curricular activities, open-access computer labs, computer camps, part-time employment requiring basic computer skills, and public libraries and museums are but a few ways in which students can engage and practice their computer skills beyond the traditional classroom setting. Teachers and parents alike should encourage students to recognize and use the computer as a tool to solve authentic problems related to real-world issues. Teachers should actively pursue support from business enterprises, governmental agencies, research institutions, and universities to provide students with technology experiences that may not otherwise be available in the traditional classroom setting.

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The Effect of Human Resource Training and Development Programs on Restaurant Turnover Rate

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Abstract

This study examined whether human resource management programs had a significant effect on the turnover rate among restaurant employees in Jasper County, Missouri and Crawford and Bourbon Counties in Kansas. Results of this study indicate that human resource management components in place does not necessarily reduce the turnover rate among restaurant employees.

Introduction

Like managers of nearly all service enterprises, restaurant industry managers are seeking ways to lower the turnover rate among employees. The implications of lower turnover among restaurant employees are considerable cost savings and perhaps increased profits for those managers who reduce their restaurants' turnover rate. In the restaurant industry, services are delivered by workers and as such employees play an extremely important role in the success or failure of the restaurants for which they work. Thus, considerable attention has been focused on the influence of human resource, training and development programs on employee turnover (e.g., Foster, 1997; Foster, 1998; Goebel, 1997; Hamstra, 1998; Huselid, 1994; Taylor, 1997; Trollinger, 1997; Zuber, 1998; Zuber, 1998a).

A number of definitions of human resource development have been put forward. For instance, Gilley (1989) defined human resource management as "the recruitment, selection, maintenance, development, and utilization of, and accommodation to, human resources by an organization." (p. 7) Mathis and Jackson (1994) divided human resource development into two categories: strategic and operational depending on whether the focus was on long-term or short-term goals. Several writers have noted the benefit of applying human resource, training and development functions to the restaurant industry. For example, Walkup (1994) noted that managers who invested in employees through human resource, training and development programs created worker loyalty, providing for a sufficient number of experienced employees at all times. As expressed by Kosinski (1994) and Oleck (1994), if restaurant managers cared about their workers, employees would care about their customers. In other words, the way restaurant managers treat their workers influences the way employees treat their customers. Thus, this study adds to the body of knowledge surrounding the influence of human resource, training and development programs on restaurant employee turnover.

Purpose

The purpose of this study was to examine the impact of human resource, training and development programs on the labor turnover rate among restaurant employees. Specifically, the following research questions were explored:

1. Is there a difference in the employee turnover rate between restaurants which have in place a human resource training and development program and restaurants which do not have in place a human resource training and development program: performance appraisal, staffing policies, and orientation?

2. Is there a relationship between restaurant employee benefits and employee turnover rate?

3. Is there a relationship between the number of human resource training and development components in place within restaurants and employee turnover rate?

Method

This section describes the procedures used during the study. Discussed are the participants, survey instrument, and data analysis.

Participants

The participants consisted of restaurant managers located within the following three counties—Jasper County in Missouri and Crawford and Bourbon Counties in Kansas. Only restaurants listed in the telephone directories of the above mention counties were included in the study. Because of the relatively small number of restaurants in the three county area, managers from all 154 restaurants were included in the study. Of the 154 surveys mailed to restaurant managers, 68 (44%) were returned. Of the 68 returned surveys, 55 were usable. Thus, a usable response rate of 35.6% was obtained.

Instrument

The survey instrument was developed by the researcher. In order to insure the clarity of the survey instrument, the instrument was pilot tested with a group of restaurant managers similar to those surveyed. Restaurant managers included in the pilot group were excluded from the survey group. This pilot test allowed the researcher to clarify confusing items so to avoid potential problems when conducting the actual survey. The survey instrument consisted of questions across the following three areas: (1) general restaurant information, (2) information regarding the restaurant's human resource management program, and (3) information regarding the restaurant's turnover rate. A cover letter describing the purpose of the study as well as instructions for completing the instrument accompanied each survey.

Data Analysis

A variety of analytical techniques were used to answer the three research questions. To determine if there was a significant difference in the employee turnover rate between restaurants which have in place a human resource training and development program and those restaurants which do not have in place a human resource training and development program, a t-test was used. To determine if a significant relationship existed between restaurant employee benefits and employee turnover rate, Pearson's correlation was used. To determine if there was a significant relationship between the number of human resource training and development components in place within restaurants and employee turnover rate, Pearson's correlation was used. Alpha for the t-tests was set at .10; alpha for Pearson's correlation was set at .05.

Findings

Question one strove to determine if there was a significant difference in the employee turnover rate between restaurants with human resource, training and development programs in place and those restaurants that do not have such programs in place: performance appraisal, staffing policies, and orientation. As presented in Table 1, results of the t-tests indicate that there is not a significant difference in the turnover of restaurant employees where there are and where there are not performance appraisal systems and orientation procedures in place; there was, however, a significant difference in the turnover of restaurant employees where there are and where there are not staffing policies in place.

Question two sought to determine if there was a relationship between employee benefits and employee turnover rate. Pearson's correlation coefficient of 0.242 was not significant at alpha = .05. Question three attempted to determine if there was significant relationship between the number of training and development components in place with restaurants and employee turnover rate. Pearson's correlation of 0.245 was not significant at alpha = .05. The average turnover rate for the receptionists, waiters, waitresses, and cooks was 39%. Average turnover rate for the busboys and dishwashers was 46.6%. The average turnover rate for all restaurant employees in this study was 38.8%. The two most frequently reported reasons for restaurant employees leaving their jobs was that the employees had moved or were terminated by the employer. Employees being not satisfied with the restaurant's policy other than pay and the employee got married were the least reported reasons for employees leaving their restaurant jobs.

Table 1
Total Employee Turnover Rates for Performance Appraisal, Staffing Policies, and Orientation

	Number of restaurants	Mean	Standard Deviation
Restaurants that do not have a performance appraisal system	30	0.4201	.71
Restaurants that do have a performance appraisal system	25	0.3503	.44
T-test one-tail significance level = 0.34			
Restaurants that do not have staffing policies	23	0.2232	.40
Restaurants that have staffing policies	32	0.5071	.70
T-test one-tail significance level = 0.04			
Restaurants that do not provide orientation	11	0.1876	.27
Restaurants that do provide orientation	44	0.4386	.65
T-test one-tail significance level = 0.11			

Conclusions and Implications

As is the case with most studies, caution should be used when interpreting the results of the current study. It should be noted that the study participants were from a relatively small geographic area and that the modest rate of usable returns (38.6%) may limit the strength of the results. Despite the above noted limitations, several conclusions are put forward. First, there is no significant difference in employee turnover rates between those restaurants that had performance appraisals and those that did not have a performance appraisal system in place. Second, restaurants which had recruitment/selection programs had higher turnover rates of employees than restaurants which did not have recruitment/selection programs. Third, restaurants which provided employee orientation had higher turnover rates among employees than did those that did not provide employee orientation. Fourth, there was not enough evidence to support the notion that the more human resource management components place, the lower the turnover rate. Lastly, there was also not enough evidence to support the idea that the more benefits provided employees, the lower the turnover rate.

Even if human resource training and development programs had a significant impact on restaurant turnover rates, the result of this study indicate the opposite effect. For example, the number of benefits which restaurants provided to the employees had no effect on lowering employee turnover rates. This condition suggests that a closer look inside employee benefit packages maybe necessary to determine what should be included to reduce worker turnover rates. Because all restaurant managers in this study had some form of training program in place, it might imply that employee training is necessary in the restaurant industry. Interestingly, restaurant managers having an employee performance appraisal system in place experienced higher turnover rates among busboys and dishwashers. This response implies that performance appraisal systems probably need to be adjusted in order to lower turnover rates among busboys and dishwashers.

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Employability Skills Required for 21st Century Jamaican Workers: Implications for Education and Training

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Abstract

The purpose of the study was to expand the knowledge base of the relationship among education, training, work, and economic development in Jamaica. Economic difficulties facing Caribbean countries point to basic weaknesses as small economies are dependent on developed countries' economies and are unable to control their own major economic determinants. Third World economies need a well-educated labor force for rapid change. This study sought to determine (a) employability requirements for a skilled Jamaican workforce, and (b) role of education/training in preparing future Jamaican workers. Study results were consistent with the American SCANS skills requirements and other data models used.

Introduction

Current economic difficulties facing Caribbean countries point to fundamental weaknesses. According to Levitt and Best (1975), the Caribbean economy has undergone very little structural changes since its inception, indicating that the character of the economic process in the region has not changed. The economy has remained passively responsive to metropolitan demands and investment, creating an ongoing dependent relationship on the economies of the Western industrial nations such as the United States of America (Miller, 1992). Specifically, massive layoffs, coupled with organizational downsizing, outsizing, and mergers have generally resulted in an insecure Jamaican workforce. Global competition, rapid advancements in technology, and changing demographics are factors impacting the labor force of any economy. Jamaica is definitely being affected by these changes creating corresponding changes in the way work is accomplished. Allen and Chadwick (1996) reported that Third World economies need a well-educated/trained labor force to adapt to rapid changes characteristic of this age.

Employers demand more from employees, requiring a multiskilled workforce. Changes in the workforce have resulted in many workers' skills being redundant, creating need for retraining. This study was conducted to assist Jamaican educators, curriculum planners and educational and training institutions in reshaping the country's education and training system. Study results could serve as a planning tool for planners in determining basic components of curriculum especially at secondary and postsecondary levels.

Objectives of the Study

This study sought to determine (a) the employability skill requirements for a skilled workforce in the country of Jamaica, and (b) the role of education and training in preparing future Jamaican workers. Specific research questions addressed employer expectations of the Jamaican workforce, their perceptions of the role of education and training in preparing workers, and differences in expectations and perceptions based upon respondent demographic characteristics.

Literature Review

Those responsible for workplace training and development are caught in a swirl of exciting possibilities and emerging requirements, according to Bassi, Cheney, and Lewis (1998). The skill of a country's labor force is heavily dependent on its education/training systems, and countries who invest in education and training are more likely to experience labor force and economy growth.

Constant changes in technology, demographics, and global competition drive innovations and developments which impact the way in which work is done and needs to be done. Changes in the workforce and economy demand that education/training institutions equip persons with survival skills applicable to work and life. Day (1998) reported a decline of balanced education in Jamaica. Having concerns for such imbalance, Gyles (1998) said that the global thrust for education supports the notion that the more educated people are, the better able they are to manage social, political, and economic problems. It is important to embrace the revival and implementation of ethics, principles and moral values, the thrust for excellence, the promotion of information technology, and the importance of a healthy lifestyle.

"As Jamaica's economy changes, so does employment opportunities and job stability" (Training, 1997, p. 2). The threat of global competition is forcing many people to assess their skills. The present job market promotes much more competition, demanding new skills and competencies in high performance work environments. Increased competition means that training programs need to undergo constant revisions in order to meet the changing nature of work. Hunte (1978), reporting on the Jamaican situation, stated that:

> the university has not created a scientific, skilled economy to deal with the current shortage of manpower in the area. Nor has the variety of specialized institutions been created between secondary schools and the university to provide for the modern technical needs of the society. (p. 106)

Although Hunte's report was published two decades ago, present-day critics argue that there has been no significant change. The Europa World Year Book (1998) recorded that in 1990, an estimated 1.6% of the adult population in Jamaica had received no schooling and in 1995, some 15% of the adult population were illiterate. Government expenditures for education and training during the 1997/1998 financial year represented only about 15% of the total budget.

Stanley (1996) emphasized that training should not be limited to prospective workers but also to adults in the workforce who must be retrained to keep pace with the development of the nation and advances in the ever-increasing information and technology-driven world economy. Moyston (1998) in an evaluative examination of the Jamaican economy and education stated that:

> the debate on education must include a call for a change in philosophy. The idea must be redefined to include a popular education program for adults. It must also consider the developments of new concepts in community colleges that will be able to lay the foundation of the building of advanced occupational classes. (p. 9)

Diverse views on problems in the economy of the country of Jamaica dominate the media locally and internationally. Contrasting arguments reported by Nicholas (1997) cited the president and chief executive officer of Alcan Jamaica Company, Bernard Cousneau, (speaking from the experiences of his company) as stating that there was the need for investment in order to become competitive for the long term. Cousneau was advocating for seeking ways of increasing productivity and cutting costs by implementing new technology in the bauxite industry. Nicholas (1997) also reported that Dr. Michael Hammer, a consultant on re-engineering felt that in order to maintain long term growth in revenue, it was not so much getting rid of people but getting more out of people. Such contrasting views warrant a national consensus on what is required of Jamaica's present and future workforce, how to maximize workers' potential and increase efficiency within organizations.

Referring to Jamaica, Honig (1996) suggested that:

> human capital theorists hypothesize that education is an investment which yields higher wage compensation in return for individual variations of skills, training and experience. Taken to the national level, investment in education leads to economic growth. (p. 178)

Schools and training institutions must assume responsibility for creating new ways of preparing the future workforce by equipping student with necessary employability skills. Suggestions for producing the desired worker for the next century include the development of Jamaica's education/training programs in collaboration with public and private industries (Worker profile of the 21st Century, 1997).

Research Procedure

This quantitative, non-experimental study utilized a descriptive research design and was investigative in nature. A survey questionnaire was used to collect data.

Population and Sample

The target population for this study was employers in the country of Jamaica defined as: managers, employment officers, personnel officers, and human resource officers/managers throughout the country.

Although a convenience sample is not necessarily the best sample to use, it is the most frequently used (Elmore & Woehlke, 1997). In the convenience sample used in this study, all 250 employers who participated in the work experience program in the summer of 1997 at the University of Technology, Jamaica were surveyed. This list was cross-matched with a list from the Registrar of Companies in Jamaica to further ensure a more accurate representation of employers in Jamaica. Employers participating in the work experience program are representative of employers in Jamaica as they are the ones who undertake on-going recruitment and employment. These employers were spread throughout the country although most of the organizations were concentrated in the Kingston Metropolitan region.

Data Gathering Instrument

The researcher-designed instrument was based on four models used in previous research in North America and Canada: *Learning a living: A blueprint for high performance, A SCANS report for America 2000* (U. S. Department of Labor, 1992); What work requires of schools (U. S. Department of Labor, 1991); *Workplace basics: The skills employers want* (Carnevale, 1989); and *Employability skills profile* (McLaughlin, 1995).

A Cronbach Reliability coefficient test was applied to test the reliability of the instrument. Results revealed r = .90. The instrument was tested for validity by five professors at Southern Illinois University, Carbondale, four experts in workforce development in Jamaica, and a panel of Jamaican graduate students at Southern Illinois University, Carbondale, who provided critique for revisions which were incorporated into the instrument.

Data Collection Procedure

Data collection packets (cover letter, questionnaire, and a self-addressed envelope) were hand-delivered in the metropolitan Kingston area (130), and others were mailed to companies throughout the country (120). Twenty-six of the 250 companies had closed operations or merged, reducing the sample to 224.

At the end of three weeks, 21 completed questionnaires were returned. Contact was then made as a follow-up procedure either by telephone reminders or by another mailed data collection packet. At the end of the follow-up period, 98 (43.75%) of the adjusted sample of 224 were returned. All 98 responses were used in the data analysis process.

Data Analysis

Data were analyzed using frequencies, percentages, means, standard deviations; ANOVA statistics were used to determine relationships, and Post Hoc Tukey and Scheffe tests were applied to statistically significant relationships.

Findings

Responses were received from 98 employers (43.75% response rate). The largest group of employers (25.5%) represented the service industry; 18.4% represented hotel and tourism; 12.2% were from manufacturing; 10.2% from insurance companies; 9.2% from banking/financial; 5.1% from education, and the remainder represented retail, agriculture, construction/architectural, mining organizations and various others. Most respondents (46 or 46.9%) were employed in personnel/employment positions while 21 (21.4%) were company managers or Chief Executive Officers; 25 (25.5%) were other managers, and 4 (4.1%) were project directors or supervisors (no response = 2 or 2.1%).

Research Question Results

In response to the employers' expectation of the Jamaican workforce, more than 90% (Table 1) indicated that all the skills identified were absolutely necessary for the present and future workforce. Resources and information skills and personal management skills were very highly ranked as employers' expectations.

When asked the extent to which they perceived education and training institutions to be adequately preparing students with employability skills, almost equal numbers of employers stated that the skills were somewhat evident or not evident (Table 2)

Respondents (Table 3) perceived education and training institutions to somewhat prepare students with employability skills in this rank order: academic (basic), technology, resources and information, teamwork, communication, critical thinking and problem-solving and personal management.

Nearly all (96 or 98%; 2 = no response) agreed that Jamaica's education/training system should include employability skills instruction. Table 4 presents employers' opinion of when employability skills instruction should begin. Forty-eight (49%) of the employers stated that employability skills instruction should begin from the first year of secondary/high school.

Using ANOVA analysis of a difference between employers' perception of the role of education and training and their type of organization they represented, no statistically significant differences were found (Table 5).

Table 1
Employers' Expectations for a Skilled Workforce

Employability Skills	Absolutely Necessary		Somewhat Necessary		Unnecessary		No Opinion	
	n	%	n	%	n	%	n	%
Academic (Basic)	91	92.8	4	4.1	1	1.1	2	2.0
Communication	92	93.8	4	4.1	1	1.1	1	1.0
Critical Thinking/Problem Solving	94	95.9	2	2.0	1	1.0	1	1.0
Personal Management	95	97.0	3	3.1	1	1.0	1	1.0
Teamwork	93	94.8	3	3.1	0	0.0	1	1.0
Resources and Information	97	99.0	0	0.0	0	0.0	1	1.0
Technology	90	91.8	4	4.1	3	3.0	1	1.0

Table 2
Respondents' Perception of the Extent to Which Education and Training Institutions Are Adequately Preparing Students with Employability Skills.

Employability Skill Preparedness	Very Evident		Somewhat Evident		Not Evident		No Opinion	
	n	%	n	%	n	%	n	%
Academic Skills	9	9.1	69	70.4	19	19.4	1	1.0
Communication Skills	6	6.1	43	43.9	47	47.9	2	2.0
Critical Thinking and Problem Solving Skills	1	1.0	39	39.8	53	54.1	3	3.0
Personal Management Skills	1	1.0	36	36.8	58	59.1	3	3.0
Teamwork Skills	4	4.0	54	55.1	39	39.7	1	1.0
Resources and Information Skills	5	5.1	53	54.0	39	39.7	1	1.0
Technology Skills	9	9.2	55	56.1	33	33.7	1	1.0

Table 3
Results of Employers' Perception on Students' Preparedness (by rank order)

Employability Skills (Rank Order)	Evidence of Preparedness		No Evidence or No Opinion	
	n	%	n	%
Academic	78	79.6	20	20.4
Technology	64	65.3	34	34.7
Resources and Information	58	59.2	40	40.8
Teamwork	58	59.2	40	40.8
Communication	49	50.0	49	50.0
Critical Thinking and Problem Solving	40	40.8	58	59.2
Personal Management	37	37.8	61	62.2

Table 4
Respondents' Perceptions on Beginning Employability Skills Instruction

Point to Begin Employability Skills Instruction	n	%
First Year of High/Secondary School	48	49.0
First Grade	21	21.4
Final Year of Primary School	18	18.4
Postsecondary Institution	8	8.2
Other	2	2.0
No Response	1	1.0
Total	98	100.0

Table 5
Analysis of Variance (ANOVA) of Employers' Perception of the Role of Education and Training by Company Type

Employability Skill	df	SS	MS	F	P
Academic (Basic)	10	1.147974	0.1147975	0.58	0.82
Communication	10	1.298851	0.1298851	0.54	0.85
Critical Thinking and Problem-Solving	10	2.043613	0.2043613	0.85	0.58
Personal Management	10	2.939491	0.2939491	1.62	0.11
Teamwork	10	3.123935	0.3123936	1.31	0.24
Research and Information	10	2.014640	0.2014640	0.85	0.58
Technology Skills	10	2.743409	0.2743410	0.84	0.59

Employers were asked to rate employability skills in two ways: (a) the extent to which these skills were considered necessary, and (b) the extent to which they perceived education and training institutions to be adequately preparing students with these skills. A Chi square test was used to identify the relationship between employers' expectations and their perceptions for each item in all seven employability skills. No statistically significant relationship was identified between their expectations and perceptions on academic skill items.

Table 6 shows a statistically significant relationship between expectations and perceptions of communication skills.

A Chi square analysis of the relationship between respondent expectations and perceptions of critical thinking and problem-solving skills is shown in Table 7 reflecting a statistically significant relationship on one item-thinking critically and creatively.

The relationship between expectations and perceptions of personal management skills produced no statistically significant relationships; however, according to Table 8, the analysis of the relationship between expectations and perception of teamwork skills revealed significant relationships on three of the four items.

Table 9 shows the analysis of the relationship between expectations and perception of resources and information skills-one statistically significant relationship.

Analysis of the difference between employers' expectations and their perception of technology skills produced no statistically significant relationships.

Table 6

Relationship Between Employers' Expectations and Perceptions on Communication Skills

Communication Skills	df	F	P
Oral communication - face-to-face and telephone	9	28.9	0.01*
Compose business documents	9	18.4	0.03*
Listen - receive, attend to, interpret and respond well to Verbal messages appropriate to purpose	6	11.7	0.07*

Note. *p < .05

Table 7

Relationship between Employers' Expectations and Perceptions on Critical Thinking and Problem-Solving Skills

Critical Thinking and Problem-Solving Skills	df	F	P
Think critically and creatively in dealing with work situations and problems	6	15.9	0.01*
Recognize, reason, define and solve problems	6	5.3	0.51
Learn continuously for life	9	12.1	0.21

Note. p < .05

Table 8

Relationship between Employers' Expectations and Perceptions on Teamwork Skills

Teamwork Skills	df	F	P
Exhibit desirable behavior in dealing with others, stress and in work situations	9	32.10	0.01*
Share responsibility with co-workers and successfully negotiate to resolve conflict	6	15.64	0.02*
Work in teams to achieve common goals	6	26.38	0.00*
Lead, when appropriate, to mobilize group for high performance	9	12.21	0.20

Note. *p < .05

Table 9
Relationship between Employers' Expectations and Perceptions on Resources and Information Skills

Resources and Information Skills	df	F	P
Manage times through scheduling, prioritizing, planning and organizing	6	4.21	0.65
Acquire, store and distribute materials, supplies, equipment and space	9	42.58	0.00*
Acquire, evaluate, organize and maintain information, manually and with computers	6	6.41	0.38
Interpret and communicate information	6	8.69	0.19

Note. *$p < .05$

Conclusions

Based on the analysis of study results, the following conclusions are presented:

1. Academic (Basic), communication, critical-thinking and problem-solving, personal management, teamwork, resources and information and technology are all necessary for Jamaica's present and future workforce.

2. There is some indication that education and training institutions are preparing students with employability skills but there is equal evidence that students need to be better prepared.

3. Employability skills instruction should be a part of Jamaica's educational/training system and should begin at the secondary school level or during the final year of primary school.

4. Employers did not vary on their perception of the role of education and training institutions in preparing people for work.

5. Gaps exist between what employers consider necessary and how adequately they perceive workers to be prepared on critical thinking and problem-solving, teamwork, resources and information and communication skills. In all cases there were differences between employers' expectations and perceptions.

6. The need for research into entry-level employee needs is necessary for developing training programs which link training with the work world.

7. Results of this study are consistent with the American SCANS skills requirements and other models used to collect data.

Recommendations

Based on the results and conclusions of the study, the following recommendations are presented:

1. Educational and training institutions should: (a) include ongoing needs analysis of the Jamaican labor market in order to ensure that employers' needs are satisfied; (b) ensure that training is relevant to the needs of the work world; (c) focus on changes in the economy locally and internationally and modify training programs accordingly; (d) build work experience into training programs so that students can perform satisfactorily on their jobs after training; and (e) include all the employability skill requirements of employers and the workforce in general.

2. Specific studies should be done for each organization type in order that occupational training programs are kept current and relevant.

3. Partnerships be established with among employers, educators, institutions, and Government to determine the (employability skills) content of curricula.

4. The University of Technology, Jamaica and other training institutions should use the results of this study to guide further research and to develop and implement programs that will close the gaps between employers' expectations and perceptions.

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Exploring the Relationships Between Organizational Culture and Self-Learning Among Office Employees

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Abstract

This study sought to describe the self-directed learning and the perceived organizational culture among university administrative assistants. Using the Bartlett-Kotrlik Inventory of Self-Learning, the respondents scores depicted them as moderately self-directed learners. The organizational culture, as perceived by the office assistants, demonstrated that the organization stressed systems thinking and supported personal mastery. Personal mastery explained 33.8% of the variance in the total self-learning score. The individuals perceived the organizational culture did not support using mental models and strict time schedules.

Being able to learn faster than competitors is one method to compete in business and industry. For an organization to stay competitive in this changing workplace, individuals within the organization must be able to stay abreast of the technological innovations which are introduced into the office. Malcom Knowles (1975, p. 18) describes self-directed learning as "a process in which individuals take the initiative without the help of other in diagnosing their learning needs, formulating goals, identifying human and material resources, and evaluating learning outcomes."

Self-directed learning in this study will examine personal, social, and environmental scales as defined in the Bartlett-Kotrlik Inventory of Self-Learning (BISL) (Bartlett, 1999). This study will view self-learning and the individuals non-institutional pursuit of learning in the natural societal setting. Learning to learn has been one of the most important challenges of the educational system. The skills needed to learn how to learn are important to all individuals, however for workers to stay productive and businesses to stay competitive, self-directed learning skills are essential in the workplace environment. Therefore it is paramount that employees develop these skills when entering the workplace.

With the rapid changes occurring within business and industry all levels of employees are being required to learn new technology to stay productive. Connections have been made between self-directed learning and the workplace. Long and Morris (1995) identified over sixty abstracts of studies that dealt with self-directed learning and business.

Self-directed learning has been shown to be greater in organizations where employees understand and contribute to the organizations' goals, and where values and risk taking were encouraged (Baskett, 1993). Other organizational culture constructs such as, a trusting environment, collaboration among employees, and effective communication have been found to enhance self-directed learning. Foucher (1996) found that a supportive organizational culture where participative management believes employees to be competent and motivated encourages learning. Foucher (1998) also reported that lack of support for self-directed learning can have different consequences from bureaucratic to less stable organizations. Bureaucratic organizations tend to have less of a need for self-directed learning than less stable organizations.

It is essential to view how the culture of an organization relates to the individuals self-directed learning behaviors. Personal mastery, systems thinking, mental models, building shared vision, and team learning are the areas related to creating a learning organization (Senge, 1990). These areas were developed within the Individuals Perceived Organizational Culture Inventory (IPOCI) used to measure organizational culture as perceived by the employees.

Objectives

The study sought to describe university administrative assistants personal self-learning behavior and organizational culture. More specifically the study:

1. described the self-learning level of office personnel.

2. described the perceived university organizational culture.

3. explored the degree to which a relationships exist between organizational culture and self-learning behaviors.

Methodology

Participants

The study sought the participation of all administrative assistants at a public university. The participating university was a public southern institution in an urban setting. The complete frame was obtained from current university directories. Due to the size of the population, field testing was completed with a different population.

Instrumentation

Following Dillman's Total Design Method, a booklet was created to assess self-directed learning, organizational culture, and the needed demographics. The BISL was used to measure self-learning behaviors of administrative assistants. The BISL is made up of 56 items. The overall estimated reliability of BISL is .87 (Bartlett, 1999). The validity of the BISL is shown through criterion-validity, content validity, and construct validity. The criterion-related validity of the BISL is shown by correlating with the Oddi Continuing Learning Inventory at .62 and by correlating with time spent using self-learning resources at .30 (Bartlett, 1999). Content validity of the BISL is demonstrated from the development of the instrument in which a full domain of content was examined and included relevant to self-learning. Construct validity is demonstrated through the theoretical relationships and the specified concepts of self-directed learning. The empirical relationships between the scale measures of the instrument and the theoretical concepts were examined. The BISL was then subjected to a final factor analysis that provided more empirical evidence to clarify the theoretical constructs of self-directed learning.

The Individual's Perceived Organizational Culture Inventory was used to measure organizational culture in 15 sub-scales. The instrument was developed from a thorough review of research literature on organizational assessment and development. In the design of the instrument, all efforts were taken to ensure universal definitions of content and simplicity of wording. Reliability measurements are not available at this time but, will be addressed in this study and be used to further develop the instrument. The demographic instrument will include the measurements of position title, gender, education, year on the job, ethnicity, technology in workplace, salary, age, and marital status.

Data Analysis

The Statistical Package for Social Science (SPSS) software was used to treat and analyze data. Means and standard deviations were used to describe the respondents' scores on the BISL and its sub-scales. The Individual's Perceived Organizational Culture Inventory was described by reporting the means and standard deviations on the overall sub-scales. Correlations were used to explore the relationship between organizational culture and self-directed learning. Also, a multiple regression analysis was conducted using self-directed learning as the dependent variable and the Individual's Perceived Organizational Culture Inventory sub-scales as the independent variables.

Results

A census of administrative employees (N=150) was selected from large southern Carnegie Research I institution to participate in the study. Of the individuals surveyed, 71 (47.3%) responded. A follow-up phone call yielded 5 (3.3%) additional responses from non-respondents for a total response rate of 76(50.6%). The t-tests in Table 1 revealed that no significant differences existed between the respondents and non-respondents on Bartlett-Kotrlik Inventory of Self-Learning total scores and Individual's Perceived Organizational Culture Inventory total scores. Since the t-tests revealed that no significant differences existed on the scores, the responses were combined and all 76 responses were used in the data analysis.

Table 2 shows that 32.9% (n=25) were university administrative specialists. The majority of the individuals (n=71, 93.4) were female, 46 (60.5%) were married, and 60 (78.9%) were Caucasian. Over half of the participants (n=39, 51.3%) had some college courses.

Table 1

Comparison of Respondents and Non-Respondents on BISL and IPOCI Total Scores

	Respondents			Non-Respondents					
	n	M	SD	n	M	SD	df	t	p
BISL	71	60.28	5.21	5	58.12	4.49	74	1.19	.696
IPOCI	69	5.10	0.98	5	4.59	0.87	72	.90	.399

Table 2
Position , Gender, Educational Level, Ethnicity, and Marital Status of the Respondents

	Number	Percent
Position Title		
University Admin Specialist	25	32.9
Clerk Chief	12	15.8
Word Processing Operator	7	9.2
Office Manager/Coordinator	7	9.2
Administrative Secretaries	11	14.5
Other	14	18.4
Gender		
Female	71	93.4
Male	5	6.6
Education Level		
Some College	39	51.3
Associate Degree	2	2.64
Year Degree	8	10.5
Masters Degree	1	1.3
Other	26	34.2
Ethnicity		
African American	9	11.8
Caucasian	60	78.9
Hispanic	1	1.3
Native American	6	7.9
Marital Status		
Married	46	60.5
Single	9	11.8
Divorced/Separated	19	25.0
Widowed	2	2.6

The participants were 44.3 (SD=9.25) years of age and were in their current position on average of 8.32 (SD=7.13) years. The participants on average earned $22,500 (SD=$5,263). The majority of the participants, (n=45, 59%) were not seeking further education. Of the participants, 94.7% (n=72) reported they had access to current technology and had a preference to work with computers to complete their job tasks.

Table 3 shows the scores on the Barlett-Kotrlik Inventory of Self-Learning sub-scales. The sub-scale scores ranged from 6.69 (SD=.37) to 4.98 (SD=.30). The highest sub-scale score of the participants was ther performance and self-efficacy of work (M=6.69, SD=.37). The lowerst sub-scale was external support (M=4.98, SD=.30). the overall estimate of internal reliability of the scale was .87.

Table 4 shows the scores on the sub-scales of the Individuals Perceived Organizational Culture Inventory. The highest sub-scale mean (M=6.00, SD=1.09) was on product systems (the viewing of the organizations product from a perspective that shows the importance of all individuals that make the product). The lowest sub-scale on the Individuals Perceived Organizational Culture Inventory was the use of mental models in the organization (M=3.36 , SD=1.08).

Table 5 shows the correlations between the Bartlett-Kotrlik Inventory of Self-Learning and the Individuals Perceived Organizational Culture Inventory Sub-Scales. Personal mastery, social systems, shared vision, openness to change, and process systems all had substantial relationships to the total self-learning score. Authority within the organization, social systems (outside of the workplace) and time schedules all had low correlations.

Table 3
Scores on the Bartlett-Kotrlik Inventory of Self-Learning Sub-Scales

Inventory	Minimum	Maximum	M	SD
Performance and Self-Efficacy of Work	5.22	7.00	6.69	.37
Others Ratings	2.33	7.00	6.38	.78
Goal Setting	2.25	7.00	6.08	.78
Intrinsic Motivation	3.75	7.00	6.36	.67
Attitude Towards Technology	1.00	7.00	6.23	1.03
Help Seeking	2.33	7.00	6.38	.77
Peer Learning	1.60	6.80	5.13	1.17
Supportive Workplace	1.25	7.00	5.51	1.49
Time Management	1.00	7.00	3.89	1.83
Extrinsic Motivation	1.33	7.00	5.46	1.38
External Support	4.00	5.25	4.98	.30

Note. Scale for the Bartlett-Kotrlik Inventory of Self Learning is as follows: 1-not true of me most of the time, 2-often not true of me, 3-seldom not true of me, 4-undecided, 5-seldom true of me, 6-often true of me, and 7-true of me most of the time.

Table 4
Scores on the Individuals Perceived Organizational Culture Inventory Sub-Scales

Inventory	Minimum	Maximum	M	SD
Product Systems	1.00	7.00	6.00	1.09
Living Systems (Consistent Values)	1.00	7.00	5.69	1.36
Personal Mastery	1.00	7.00	5.66	1.44
Goal Setting	1.00	7.00	5.61	1.41
Authority	2.50	7.00	5.52	1.14
Process Systems	3.80	7.00	5.51	.82
Expectations	1.00	7.00	5.33	1.44
Openness to Change	1.00	7.00	5.29	1.44
Social Systems (Open Communication)	2.00	6.17	5.07	1.04
Shared Vision	1.00	5.00	5.05	1.61
Importance of Team	1.25	6.75	4.88	1.02
Supportive Workplace (Mentoring)	1.00	7.00	4.58	1.75
Social Systems (Outside Workplace)	1.00	7.00	4.10	1.76
Time Schedules	1.00	6.00	4.07	.88
Mental Models	1.00	7.00	3.63	1.80

Note. Scale for the Individuals Perceived Organizational Culture Inventory is as follows: 1-not true most of the time, 2-often not true , 3-seldom not true , 4-undecided, 5-seldom true , 6-often true , and 7-true most of the time.

Table 5
Pearson Correlations Between the Bartlett-Kotrlik Inventory of Self-Learning Scores, and the Individuals Perceived Organizational Culture Inventory Sub-Scales

Individuals Perceived Organizational Culture Inventory Sub-Scales	Bartlett-Kotrlik Inventory of Self-Learning		
	r	Interpretation	p
Personal Mastery	.621	Substantial	<.001
Social Systems (Open Communication)	.513	Substantial	<.001
Shared Vision	.511	Substantial	<.001
Open to Change	.506	Substantial	<.001
Process Systems	.503	Substantial	<.001
Expectations	.481	Moderate	<.001
Product Systems	.456	Moderate	<.001
Goal Setting	.439	Moderate	<.001
Living Systems (Consistent Values)	.388	Moderate	.001
Supportive Workplace (Mentoring)	.361	Moderate	.001
Importance of Team	.321	Moderate	.005
Mental Models	.308	Moderate	.007
Authority	.293	Low	.011
Social Systems (Outside Workplace)	.196	Low	.092
Time Schedules	.125	Low	.284

Note. Interpretations according to Davis's (1971) descriptors: .01-.09 (negligible), .10-.29 (low), .30-.49 (moderate), .50-.69 (substantial), .70-.99 (very high), and 1.0 perfect

Model to Explain the Variance in Bartlett-Kotrlik Inventory of Self-Learning With Organizational Culture Variables

Objective 3 sought to explore if organizational culture variables could be used to explain variance in the Bartlett-Kotrlik Inventory of Self-Learning. The variables used in this analysis were: goal setting, shared vision, openness to change, authority within organization, time schedules, expectations, importance of teams, supportive workplace mentoring, living systems (consistent values), social systems (openness to communicate), social systems (outside of workplace), process systems, product systems, mental models, and personal mastery. The stepwise regression analysis was conducted with a significant probability value of .05 for a variable to enter and a significant probability of .10 to exit. The assumptions of multiple regression according to Hair, Anderson, Tatham, & Black (1995) were assessed. The stepwise regression analysis presented in Table 6 shows that personal mastery within the organizational culture explained 33.8% of the variance in the Bartlett-Kotrlik Inventory of Self-Learning. The other variables in Table 8 did not explain a significant proportion of the variance.

Table 6
Stepwise Multiple Regression Analysis of Self-Directed Learning and the Individuals Perceived Organizational Culture Inventory Sub-Scales

Source of variation	SS	df	MS	F	p
Regression	666.95	1	666.95	36.08	<.001
Residual	1304.63	72	18.12		
Total	1971.58	73			
Variables in the equation			R^2	**Beta**	**Cum R^2**
Personal Mastery			338	.582	.338
Variables not in the equation			t	p	
Process Systems			1.671	.099	
Mental Models			1.560	.123	
Authority			-.756	.452	
Supportive Workplace Mentoring			-.708	.482	
Time Schedule			.526	.600	
Living Systems (consistent values)			-.498	.620	
Openness to Change			.377	.707	
Product Systems			-.330	.742	
Shared Vision			-.303	.763	
Social Systems (outside workplace)			.281	.779	
Importance of Teams			.216	.830	
Social Systems (open to communicate)			.072	.943	
Goal Setting			-.039	.969	
Expectations			.020	.984	

Implications

This study provides evidence that administrative office employees within this university setting studied possess self-directed learning skills. The organizational culture sub-scales, as perceived by the office employees, correlate with the overall self-directed learning behaviors of those employees. This provides evidence that developing the organizational culture sub-scales that are highly correlated with self-learning would provide a workplace that would better support employees to be life-long learners and deal with change while learning daily. The self-learning score was most explained by an organizational culture that supports the personal mastery of employees. Personal mastery needs to be supported within the organizational culture.

Conclusions

The researcher would caution generalizations of these findings beyond this university until further research is conducted. Objective one was to describe the self-learning level of office personnel. The office employees had a moderately strong level of self-learning. Objective two was todescribe perceived university organizational culture. The organizational culture demonstrated that within this organization there was a high value placed on product systems. The organization's culture stressed the importance and role all people play in developing their product. The culture also stressed the importance of consistent values. The culture of the organization also provided employees with the sense that personal mastery was supported. Objective three was to explore the degree to which a relationship exists between organizational culture and self-learning behaviors. All of the organizational culture sub-scales correlated with the self-directed learning score. The organizational culture construct supporting personal mastery explained the largest variance in self-directed learning.

Further Research

Further development of the organizational culture scales is needed to provide a more robust view of organizational culture. Examining the relationship between sub-scales of the self-learning instrument and the organizational culture survey would provide more information to examine how the two constructs relate. To further the understanding of self-learning, it is essential to examine time spent using self-learning resources and the specific resources that office employees use. Examining how these resources relate to organizational culture would also provide further understanding and expanded knowledge on the areas to develop within organizational culture to strengthen employees self-directed workplace learning.

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International Business Education:
What Should be Taught and By Whom?

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Abstract

International business competencies deemed important by business education teachers and those deemed important by social science teachers were identified. Business education teachers identified 57 competencies as important and 18 competencies as not important to teach in either a stand-alone business course or integrated into other business courses. Social studies teachers identified 24 competencies as important and 9 competencies as not important to teach in either a stand-alone social studies course or integrated into other social studies courses. International business concepts of overlap and neglect between business education and social sciences were also identified. Of the 80 competencies in the study, 14 overlapped as important, 2 overlapped as not important, and 16 competencies were neglected by both business and social studies.

Introduction

The globalization of American business, the technological advances of the Internet and e-commerce, and the political changes worldwide have brought forward the importance of international business in the business curriculum. Teaching materials and resources are prevalent to teach a stand-alone course or to integrate international business concepts into existing business classes. The National Standards for Business Education (NBEA, 1995) and state standards have identified competencies for instruction in international business. Social studies is another discipline that stakes a claim to the teaching of international business competencies.

Review of Literature

In the past decade, the business education discipline has embraced international business as an important curriculum subject. Publishers have developed textbooks, simulations, and other resources for teaching international business courses and/or integrating international business concepts in existing courses. Yearbook No. 29 from the National Business Education Association, A Global Look at Business Education (Echternacht, 1992), launched the discipline's adoption of international business. More recently, the Delta Pi Epsilon Journal Summer 1998 issue was devoted to international business issues. Echternacht states "international business concepts and procedures must be integrated into the business curriculum so students are prepared for the global society in which they will work and live" (1998). Scott (1996) identified two instructional designs for teaching international business concepts. A separate course approach is just that--a dedicated course based on international business concepts. The second approach is the infusion approach where concepts are integrated in other business courses. Dlabay (1998) reinforced the importance of integration in order for students to gain the necessary competencies needed for global business activities.

International business competencies considered important by Fortune's 500 global firms were identified (Zeliff, 1993). States and professional organizations have developed curriculum standards for business education based on competencies. A list of eighty international business competencies were generated from those of NBEA (1995) and the states of Alaska-Oregon-Washington (International Trade, 1989), Delaware (Business Education, 1990), Georgia (Rogers, 1991), Missouri (1998), Tennessee (International Business, 1993), and Virginia (Business Education, 1991).

Purpose of Study

The purposes of the study are to:

1. Identify international business competencies considered important and/or taught by business education teachers.
2. Identify international business competencies considered important and/or taught by social studies teachers.
3. Identify overlapped competencies between business education and social studies.
4. Identify neglected competencies between business education and social studies.

Procedures

Pilot Survey

From seven international business curriculum guides and/or competency lists, a questionnaire of 82 competencies and 12 demographic questions was developed and piloted in April 1998. The pilot was sent to five college/university DPE members and five secondary DPE members. DPE members equally represented the Western, Mountain-Plains, North Central, Eastern, and Southern regions of the country. DPE members were asked to enlist a social studies counterpart at the members' institution to complete an equal social studies pilot survey.

Survey

From the results of the pilot study, the final questionnaire was refined to 80 competencies (Table 1).

Table 1
International Business Competencies

No.	Competency
1	Discuss the relationship between international events and the daily conduct of business.
2	Interpret the impact of emerging economic and political changes in international operations.
3	Identify international trade partners, explain their role, and point out the trading patterns of companies based on region, state, and country.
4	Describe the impact of international business activities on the local, regional, national, and international economies.
5	Analyze the potential impact (on a community, region, state, and country in which it is located) of a domestic company involving itself in international trade opportunities.
6	Locate the major trade regions of the world.
7	Explain the relationships of the major trade alliances with each other.
8	Determine the impact of geography on international business, to include areas such as climate, time zones, distance, topography, and social, economic, and natural resources.
9	Identify the characteristics of countries referred to as industrialized, developing, and less developed.
10	Identify careers that are influenced by international business.
11	List the skill requirements/qualifications needed to enter a selected international business career path.
12	Identify and locate major US representational offices and sources of assistance located abroad.
13	Explain the role of customs agencies.
14	Prepare international trade documentation.
15	Discuss complications involved when speaking or interpreting a language incorrectly abroad.
16	Compose effective business communication based on understanding of the relevant environments and differences in tone, style, and format.
17	Analyze the effectiveness of individuals communicating in an international environment given a specific situation.
18	Identify international cultural differences in food, dress, gift giving, business entertainment, and other social behaviors.
19	State examples of nonverbal communication (time, silence, space, body/eye contact) affecting international business relationships and negotiations.
20	Communicate with international organizations or individuals electronically using telephone, fax, telex, electronic mail, and/or the Internet.
21	Evaluate which telecommunication methods are most appropriate for given international business situations.
22	Compare the social roles of various subpopulations (women and minorities) in different countries.
23	Identify distinctive social, weather, and cultural factors affecting business activities (time, workday, workweek, schedules, and holidays).
24	Predict how the social, cultural, and religious environment of a given country might impact a company beginning to do business in that country.
25	Identify various types of governments, political systems, and functions of government in other countries.
26	Define trade barriers, tariffs, and quotas.
27	Describe how trade barriers, tariffs, quotas, and taxation policies affect choice of location for companies operating internationally.
28	Predict how the political and geographical environment of a given country will impact international business.
29	Describe the differences among various legal systems such as code, statutory, and common law.
30	Describe US licensing requirements for the export of products and services and foreign market entry requirements.
31	Recognize legal differences that exist between and among countries in areas such as consumer protection, product guidelines, labor laws, contract formulation, liability, and taxation.
32	Define methods for resolving legal differences such as mediation, arbitrage, and litigation in different cultures.

table continued

33 Identify the levels of regulation applied to intellectual properties (copyrights, trademarks, and patents) in different countries.
34 Analyze the major legal aspects and ramifications of international relations with special emphasis on topics such as financial systems and reporting, licensing, and judicial systems.
35 Identify and compare domestic and global generally accepted accounting practices (GAAP).
36 Discuss legal implications on the ethical conduct of business across national boundaries.
37 Identify the natural, human, and capital resources used to produce goods and services exported to other countries.
38 Define terms such as balance of trade, foreign debt, and cost of living.
39 Describe situations in which comparative and absolute advantages occur.
40 Analyze the economic potential of a country engaging in international trade.
41 Explain how decision making and opportunity costs are used to allocate the scarce resources of companies and countries.
42 Identify the economic system in a country used to decide what to produce, how it is produced, and for whom it is produced .
43 Discuss the effect of literacy level, technology, natural resource availability, and infrastructure on the level of a company's economic development.
44 Interpret current economic statistics for different countries.
45 Determine appropriate business strategies for a foreign market in situations such as pure competition, monopolistic competition, and oligopoly.
46 Discuss the effects of ethics, social responsibility, and bribes on business abroad.
47 Explain how currency exchange rates affect companies.
48 Describe how economic conditions, balance of payment situations, and political issues affect currency values.
49 Calculate currency exchange transactions.
50 Distinguish between hard and soft currencies and convertible and non-convertible currencies.
51 List sources of capital for international, transnational, multinational, and global companies.
52 Describe the international monetary system, including the International Monetary Fund, World Bank, Eurocurrencies, and other international banking organizations.
53 Describe the mechanics, terminology, conditions, and terms of letters.
54 Identify major country, foreign exchange, and commercial risks associated with international business.
55 Describe available insurance options to protect against trade risks.
56 Describe the production processes used to create goods and services in different countries.
57 Describe the different living and working conditions found in foreign countries.
58 Identify the factors that influence the application of managerial styles in different countries.
59 Define such terms as host country, home country, expatriate, host country national, third country national, and labor organizations.
60 Illustrate how social, cultural, technological, and geographical factors influence consumer buying and behavior in different cultures.
61 Describe how a company markets a product/service in other countries.
62 Describe how marketing mix elements need to be adapted for international marketing efforts.
63 Develop an international marketing plan for a company entering a foreign market.
64 Explain how brands and packages are affected by culture and how they may need to be altered before marketing in a new environment.
65 Explain how social, cultural, and political factors affect the new product development process.
66 Convert weights and measures from English to the metric system.
67 Explain how foreign exchange, economic conditions, and the international business environment affect prices charged in foreign markets.
68 Design a pricing strategy for a product sold in an international market.
69 Contrast direct and indirect distribution channels and their costs for international marketing.
70 Identify the differences in roles of agents, wholesalers, retailers, freight forwarders, export companies, trading companies, and customs brokers.
71 Describe situations in which each transportation method would be most appropriate.
72 Discuss media used in different foreign markets.
73 Analyze the influence of social and cultural factors affecting promotions used in foreign markets.
74 Evaluate the effectiveness of a promotional mix campaign used by a company in a foreign market.
75 Identify goods and services imported to or exported from a state, region, or country.
76 Identify circumstances under which countries would trade with each other.
77 Identify documents commonly used in the importing and exporting process.
78 Explain how historical events have contributed to the formation of strategic trade alliances.
79 Identify organizations, government agencies, and other resources that a small and/or medium size business might use to investigate international trade opportunities.
80 Compare the business plans of a domestic company and of a company involved in international business activities.

In March 1999, the survey was mailed to the 84 active DPE chapters nationwide. Chapters were asked to become involved in the national project and to ask members to participate as well as enlist a social studies counterpart at the member's institution. In addition, the questionnaire was mailed to 103 Gamma Chi Chapter members, the chapter to which the lead researcher belonged. Respondents were asked to mark the following for each of the eighty competencies (Table 2).

A demographic section of the survey asked the original 13 questions (Table 3).

Table 2
Respondents' Choice of Responses to 80 International Business Competencies

A - You believe the competency should be taught in a business/social studies course.
B - You have taught the competency by integrating in a business/social studies course.
C - Yes to both "A" and "B."
D - None apply.

Table 3
Demographic Information

81. Gender
A) Male B)Female

82. Ethnic group
A) American Indian/Alaskan Native B) Asian or Pacific Islander
C) African American D) Hispanic E) White

83. Age in years
A) 20-30 years B) 31-40
C) 41-50 D) 51-60 E) over 60

84. Region
A) Western B) Mountain-Plains
C) North Central D) Eastern E) Southern

85. Teaching level
A) Middle School (5-8) B) High School (9-12)
C) Post-Secondary (2 years) D) College/University (4 years) E) Other ____________
(identify)

86. Current educational/institutional community
A) Rural B) Suburban
C) Metropolitan

87. Current educational institution city size
A) less than 25,000 B) 25,001-50,000
C) 50,001-75,000 D) 75,001-100,000 E) over 100,000

88. Taught international business topics in other courses
A) Yes B) No

89. Integrated international business topics in other courses
A) Yes B) No

90. International experience - Tourist
A) less than 2 years B) 2-5 years
C) 6-10 years D) over 10 years E) none

table continued

91. International experience - Business travel

A) less than 2 years	B) 2-5 years	
C) 6-10 years	D) over 10 years	E) none

92. International experience - Employment

A) less than 2 years	B) 2-5 years	
C) 6-10 years	D) over 10 years	E) none

93. Intercultural experience while in US—social and/or business interactions with international individuals.

A) Yes	B) No

Data Collection and Analysis

Of the surveys mailed, 68 business and 48 social studies were received. The exact return rate was difficult to calculate since participants from 84 DPE chapters were invited to participate. Not all social studies counterparts completed the survey. The intent of the study was to have the same sample for business (n=68) and social studies (n=48).

Demographic Information of Respondents

Among the business education respondents, there were 47 females and 21 males. Among the social studies respondents, there were 21 females and 27 males. All five ethnic groups were represented among the respondents, with white being the majority in both business and social studies groups. About two thirds of the respondents for both business and social studies were between the ages of 40-61, and about two thirds were high school teachers. Over half of the respondents for both groups were from the North Central region, followed by Mountain Plains, Southern, Eastern, and Western. This could be attributed to individual requests for participation to individual members of the Gamma Chi DPE chapter which is in the North Central region.

The type of community and size of the city in which the educational institution is located may affect the respondents' perceptions of the importance of teaching international business competencies. Equally represented for both business education and social studies respondents were those from rural and suburban communities (Table 4).

Table 4
Current Educational/Institutional Community of Respondent

	Business Education **n=68**	**Social Studies** **n=48**
Rural	29 - 43%	18 - 37.5%
Suburban	29 - 43%	18 - 37.5%
Metropolitan	10 - 14%	12 - 24%

Cities with a population of less than 25,000 were the highest for both business and social studies respondents (Table 5). This confirmed that most respondents were from rural and suburban communities.

Table 5
Current Educational/Institutional Community Size of Respondent

	Business Education **n=68**	**Social Studies** **n=48**
Less than 25,000	30 - 44%	16 - 33%
25,001-50,000	8 - 12%	12 - 25%
50,001-75,000	12 - 18%	5 - 10%
75,001-100,000	6 - 8%	7 - 15%
over 100,000	12 - 18%	8 - 17%

Respondents reported if they had previously taught a stand-alone international business course (Table 6). Nearly the same percentage for both disciplines taught most of the international business concepts with the integrated model rather than a stand-alone course. Business education (15%) respondents reported a higher percentage of teaching a stand-alone course over social studies (10%).

Table 6
Respondents Teaching Stand-Alone International Business Course Versus Integration in Other Courses

	Business Education **n=68**	**Social Studies** **n=48**
Stand-Alone International Business Course	10 - 15%	5 - 10%
Integrated in Other Course	58 - 85%	43 - 90%

The perception of the importance of international business competencies by respondents could also be affected by personal experience. Years' experience as an international tourist, business traveler, and employee may affect the teaching of international business competencies. Of the three categories, both business education and social studies reported more experience as tourists over business traveler and employee, although both had less than two years experience in international tourism (Table 7).

Table 7
Respondents' International Experience as Tourist, Business Traveler, and Employment

	Tourist		Business Travel		Employment	
	BE (n=68)	SS (n=48)	BE (n=68)	SS (n=48)	BE (n=68)	SS (n=48)
Less than 2 years	29 - 43%	21 - 44%	14 - 21%	20 - 42%	11 - 16%	12 - 25%
2-5 years	8 - 11%	6 - 13%	1 - 1.5%	3 - 6%	0 - 0%	5 - 10%
6-10 years	6 - 8%	3 - 6%	0 - 0%	0 - 0%	3 - 4.5%	0 - 0%
over 10 years	6 - 8%	4 - 8%	1 - 1.5%	0 - 0%	0 - 0%	0 - 0%
None	19 - 30%	14 - 29%	52 - 76%	25 - 52%	54 - 79.5%	31 - 65%

Respondents' interactions with international individuals while in the US could also affect the respondents' perceptions of the importance of international business competencies (Table 8). For both disciplines, three fourths of the respondents reported intercultural experience with international individuals. These international individuals could be students, relatives, acquaintances, and tourists.

Table 8
Intercultural Experience While in US—Social and/or Business Interactions with International Individuals

	Business Education n=68	Social Studies n=48
Yes	53 - 78%	36 - 75%
No	15 - 22%	12 - 25%

Business Education Respondents' Perception of Importance of International Business Competencies

Of the 80 international business competencies, 57 were deemed important to teach in either a stand-alone business course or integrated into other business courses by 75 percent or more of the business education respondents (Table 9). The competencies deemed important by business education were in the international business areas of trade partners, impact of international business, careers, communication, etiquette and cultural factors, international trade, accounting practices, international economic concepts, currency rates, monetary system, and global marketing strategies.

Of the 80 international business competencies, 18 were deemed as not important to teach in either a stand-alone business course or integrated into other business courses by 24 percent or more of the business education respondents (Table 10). The competencies deemed less important by business education were in the international business areas of industrial development, customs and governmental agencies, social roles, political and government systems, legal practices, economic statistics, metric system, and historical events. The percentage of business education respondents perceiving these competencies as not important, however, was low with the range accepted in this study to be 25-41 percent. One would look for higher percentages of 75-100 percent, but these were not found.

Social Studies Respondents' Perception of Importance of International Business Competencies

Of the 80 international business competencies, 24 were deemed as important to teach in either a stand-alone social studies course or integrated into other social studies courses by 79 percent or more of the social studies respondents (Table 11). The competencies deemed important by social studies were in the international areas of current international political and economic events, trade partners and regions, impact of international business, geographical considerations, cultural factors, international trade, and international economic concepts. All social studies respondents agreed that three competencies were important (Competency 9, 25, 26).

Of the 80 international business competencies, 9 were deemed as not important to teach in either a stand-alone social studies course or integrated into other social studies courses by 75 percent or more of the social studies respondents (Table 12). The competencies deemed not important by social studies were in the international business areas of trade documentation, communication, currency rates, insurance, and global marketing strategies.

Table 9

Competencies Rated Important by Business Education Respondents

Competency	Rated as Important	Competency	Rated as Important	Competency	Rated as Important
4	94%	24	84%	79	81%
64	93%	46	84%	6	79%
11	91%	80	84%	37	79%
16	90%	73	84%	15	78%
65	90%	21	82%	33	78%
70	90%	31	82%	36	76%
10	88%	41	82%	42	76%
27	88%	45	82%	52	76%
38	88%	49	82%	56	76%
47	88%	53	82%	62	76%
76	88%	57	82%	69	76%
1	87%	67	82%	77	76%
61	87%	72	82%	2	75%
18	85%	75	82%	3	75%
20	85%	17	81%	35	75%
28	85%	23	81%	43	75%
60	85%	26	81%	54	75%
5	84%	48	81%	58	75%
19	84%	74	81%	71	75%

Table 10

Competencies Rated Not Important by Business Education Respondents

Competency	Rated as Not Important	Competency	Rated as Not Important	Competency	Rated as Not Important
14	41%	39	32%	44	26%
12	38%	29	31%	51	26%
78	35%	34	31%	55	26%
66	34%	13	29%	9	25%
22	32%	25	29%	40	24%
32	32%	50	28%	59	24%

Table 11

Competencies Rated Important by Social Studies Respondents

Competency	Rated as Important	Competency	Rated as Important	Competency	Rated as Important
25	100%	4	92%	57	83%
26	100%	37	92%	18	81%
9	100%	77	92%	42	81%
6	96%	2	90%	3	79%
22	96%	28	88%	5	79%
38	96%	75	88%	7	79%
8	94%	1	85%	24	79%
76	94%	27	85%	78	79%

Table 12
Competencies Rated Not Important by Social Studies Respondents

Competency	Rated as Not Important	Competency	Rated as Not Important
63	83%	55	79%
49	81%	80	79%
68	81%	74	77%
69	81%	14	75%
21	79%		

Of the competencies deemed important by 75 percent or more of the business education and social studies respondents, 14 overlapped between both disciplines (Table 13). The competencies deemed important by both business education and social studies were in the international business areas of trade partners, current international political and economic events, impact of international business, cultural factors, international trade, and international economic concepts.

Of the competencies deemed not important by both business education and social studies respondents, only two were deemed not important by both disciplines (Table 14). The competencies deemed not important by both business education and social studies were in the international areas of trade documentation and insurance.

Of the 80 competencies, 16 were considered not important by the combined results of business education and social studies (Table 15). These would be competencies neglected by both business and social studies. The competencies neglected by both business education and social studies were in the international areas of customs and governmental agencies, speaking a foreign language, legal practices, and insurance.

Table 13
Competencies of Overlap Between Business Education and Social Studies

No.	Competency
1	Discuss the relationship between international events and the daily conduct of business.
2	Interpret the impact of emerging economic and political changes in international operations.
3	Identify international trade partners, explain their role, and point out the trading patterns of companies based on region, state, and country.
4	Describe the impact of international business activities on the local, regional, national, and international economies.
5	Analyze the potential impact (on a community, region, state, and country in which it is located) of a domestic company involving itself in international trade opportunities.
18	Identify international cultural differences in food, dress, gift giving, business entertainment, and other social behaviors.
24	Predict how the social, cultural, and religious environment of a given country might impact a company beginning to do business in that country.
27	Describe how trade barriers, tariffs, quotas, and taxation policies affect choice of location for companies operating internationally.
28	Predict how the political and geographical environment of a given country will impact international business.
37	Identify the natural, human, and capital resources used to produce goods and services exported to other countries.
42	Identify the economic system in a country used to decide what to produce, how it is produced, and for whom it is produced.
57	Describe the different living and working conditions found in foreign countries.
75	Identify goods and services imported to or exported from a state, region, or country.
77	Identify documents commonly used in the importing and exporting process.

Table 14
Competencies Not Important by Both Business Education and Social Studies

No.	Competency
14	Prepare international trade documentation.
55	Describe available insurance options to protect against trade risks.

Table 15
Competencies Neglected by Business Education and Social Studies

No.	Competency
12	Identify and locate major US representational offices and sources of assistance located abroad.
13	Explain the role of customs agencies.
15	Discuss complications involved when speaking or interpreting a language incorrectly abroad.
29	Describe the differences among various legal systems such as code, statutory, and common law.
30	Describe US licensing requirements for the export of products and services and foreign market entry requirements.
32	Define methods for resolving legal differences such as mediation, arbitrage, and litigation in different cultures.
34	Analyze the major legal aspects and ramifications of international relations with special emphasis on topics such as financial systems and reporting, licensing, and judicial systems.
39	Describe situations in which comparative and absolute advantages occur.
40	Analyze the economic potential of a country engaging in international trade.
50	Distinguish between hard and soft currencies and convertible and non-convertible currencies.
51	List sources of capital for international, transnational, multinational, and global companies.
55	Describe available insurance options to protect against trade risks.
56	Describe the production processes used to create goods and services in different countries.
59	Define such terms as host country, home country, expatriate, host country national, third country national, and labor organizations.
63	Develop an international marketing plan for a company entering a foreign market.
68	Design a pricing strategy for a product sold in an international market.

Conclusions and Recommendations

Conclusions

This study identified the international business competencies deemed important and not important by business education, the competencies deemed important and not important by social studies, the competencies which overlap between the disciplines, and the competencies neglected by both. The competencies deemed important by business were in the business-related areas of careers, communication, etiquette and cultural factors, trade, currency, monetary systems, accounting practices, and global marketing. Those deemed not important by business education were in the areas less business related such as customs and governmental agencies, political and government systems, metric system, legal practices, and historical events.

The competencies deemed important by social studies were in areas more typical to the social sciences such as current international political and economic events, trade regions, and geographical considerations. The competencies deemed not important by social science were in the business-related areas of trade documentation, communication, currency rates, insurance, and global marketing.

The competencies deemed important by both disciplines were in the international business areas of trade partners, impact of international business, cultural factors, international trade, and international economic concepts. The competencies deemed not important by both business education and social studies were in the international business areas of trade documentation and insurance. Competencies neglected by both business and social were in the international areas of customs and governmental agencies, speaking a foreign language, and legal practices.

The majority of respondents were from the North Central region and rural or suburban communities. The cities of the majority of respondents' respective educational environments had a population of less than 25,000. Respondents from this more rural environment, often perceived as more closed and isolated than others, showed that 85 percent of business education respondents integrated international business competencies in business classes, and 90 percent of the social studies respondents integrated international business competencies into social studies courses.

Recommendations

This study used volunteer members from DPE chapters across the country, with the majority of respondents from the North Central region. A similar study conducted with equal representation from all five regions could be completed. Two thirds of respondents were from high schools. The study could be replicated to ensure a higher representation from post-secondary and university environments.

Competency-drive curriculum or frameworks is strong in many states, with other reform initiatives prevalent in others. Many states have mandated knowledge and performance standards as indicators of student and school district success. Other states have taken on other reform movements such as constructivism. Educators who teach and develop curriculum from other environments than competency-based environments are encouraged to pursue international business curriculum studies.

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Latent Sources of Computer Self-Efficacy

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Abstract

Self-efficacy beliefs can be developed by four sources of influence: mastery experiences, vicarious learning, social persuasion, and affective states. Computer competence gained through mastery experiences contributes to an individual's judgment of self-efficacy for computer related tasks. Experience alone will not heighten computer self-efficacy, vicarious experiences, social persuasion, and affective states interact with mastery experiences to modify computer self-efficacy beliefs.

Introduction

According to Bandura (1977, 1986, 1995), self-efficacy beliefs can be developed by four sources of influence: mastery experiences, vicarious learning, social persuasion, and affective states. Mastery experiences are considered the most influential source of efficacy information for two reasons (1) it is based on direct, personal experiences, and (2) mastery is most often attributed to one's own effort and skill. Personal efficacy can be created and strengthened through vicarious learning experiences provided by social encounters. Observing successful role models enhances self-efficacy beliefs. Social persuasion (verbal encouragement) within realistic boundaries can persuade people to try harder resulting in self-affirming beliefs that lead to success. Affective states are determined by perceived reactions to situations influenced by personal mental and physical conditions. Stress, anxiety, and physical characteristics effect judgments of capabilities.

Computer self-efficacy refers to a judgment of one's capability to use a computer. Computer self-efficacy is an important personal trait that influences an individual's decision to use computers (Compeau & Higgins, 1995). Loyd and Gressard (1984) identified three types of computer attitudes that appear to have consequential effects on students' computer skill acquisition: anxiety, liking, and confidence. Computer competence gained through mastery experiences contributes to an individual's judgment of self-efficacy for computer related tasks. Exposure to computers alleviates anxiety, possibly increasing interest and confidence. Experience alone will not heighten computer self-efficacy (Campbell & Williams, 1990), vicarious experiences, social persuasion, and affective states interact with mastery experiences to modify computer self-efficacy beliefs.

Problem and Purpose

Although several studies have found varying contributions of the four self-efficacy sources (mastery experiences, vicarious learning, social persuasion, and affective states) in students' mathematics self-efficacy (Lopez, Lent, Brown, & Gore, 1997; Lent, Lopez, Brown, & Gore, 1996; Matsui, Matsui, & Ohnishi, 1990), the magnitude of the four sources of computer self-efficacy has not been investigated. The purpose of this study was to investigate the influence of the four sources of computer self-efficacy.

Methodology

Sample

Research participants were 194 students (76 female and 118 male) enrolled in an introductory microcomputers course at a large Midwest university. They were predominantly White (88%); African Americans (8%), Native American (2%), Asian American (1%), Hispanics and Other (1%) made up the remaining portion of the sample. The mean age was 20.18 (SD = 2.77).

Instrument

The Background Questionnaire included measures of demographic characteristics (gender, age, ethnicity, major, grade classification) and personal computer ownership.

The perceived sources of computer self-efficacy were assessed with a 20-item measure. The instrument originally developed by Lent, Lopez, & Bieschke (1991) designed to measure mathematics self-efficacy sources was modified to assess computer self-efficacy sources. The source measure consisted of four rationally developed scales corresponding to the four sources of efficacy described by Bandura (1986). Sample items included "I got a high grade in my last computer class (Mastery Experiences Scale), "Many of the adults I admire use computers" (Vicarious Learning Scale), "My parents have encouraged me to take computer courses" (Social Persuasion Scale), and "I'm nervous when using a computer" (Affective States Scale). Participants responded by indicating their level of agreement with each statement on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

Procedure

Research instruments were administered during a sixteen-week introductory microcomputer course. Data collection occurred at the beginning of the Fall 1998 and Spring 1999 semesters. Six sections with an average enrollment of 35 students per section completed the research instruments.

Research Design

Descriptive statistics for the four computer self-efficacy source scales include mean scores and standard deviations. Statistical analysis to measure the magnitude of the four sources of computer self-efficacy included Pearson product-moment correlations and ANOVA for the four scales.

Findings

Examination of each scale mean indicated that mastery experiences signified the highest level of computer self-efficacy with a reported mean score of 4.2, followed by affective states (4.1).

Table 1
Four Sources of Computer Self-efficacy

Source	M	SD	n
Mastery Experiences	4.2	.52	194
Vicarious Learning	3.6	.70	194
Social Persuasion	3.9	.65	194
Affective States	4.1	.77	194

An exploration of the potential differences between gender and the four computer self-efficacy source variables found females had a higher mastery experience scale mean (4.3) than males (4.1). Vicarious learning and social persuasion scale means were higher for females (3.6 and 4.1 respectively) than males (3.5 and 3.8 respectively). Affective states scale means showed no distinct gender differences.

Table 2
Computer Self-efficacy Mean Scores for Gender

Gender	n	ME	VL	SP	AS
Female	76				
Mean		4.3	3.6	4.1	4.1
SD		.46	.70	.63	.77
Male	118				
Mean		4.1	3.5	3.8	4.1
SD		.55	.71	.64	.78

Note. ME=mastery experiences, VL=vicarious learning, SP=social persuasion, AS=affective states.

A two-way ANOVA for each of the four scales with gender as a between-subjects factor was performed. There was a significant (F = 8.26, $p < .05$) interaction effect between gender and mastery experiences. The significant (F = 8.23, $p < .05$) interaction effect between gender and social persuasion was also significant. Results indicate vicarious learning (F = 2.25, $p > .05$) and affective states (F = .186, $p > .05$) did not have a significant interaction with gender.

Personal computer ownership was reported by 101 (52%) of the 194 study participants. Subjects who owned a personal computer had a higher vicarious learning scale mean (3.7) than individuals who did not own a personal computer (3.3). Personal computer ownership mean differences did not emerge for the mastery experiences, social persuasion, and affective states computer self-efficacy scales.

Pearson product-moment correlation coefficient with a two-tailed probability revealed a significant correlation ($r = .57$, $p < .01$) between mastery experiences and affective states. At the .05 level, mastery experiences had a significant correlation between vicarious learning ($r = .16$) and social persuasion ($r = .18$). A significant correlation was found between vicarious learning and social persuasion ($r = .30$, $p < .01$). The relationship between vicarious learning and affective states failed to confirm a statistically significant correlation ($p > .05$). A significant correlation was revealed between social persuasion and affective states ($r = .15$, $p < .05$).

The incorporation of an age variable into the correlation matrix revealed an inverse correlation ($r = -28$, $p < .01$) between social persuasion and age. Statistically significant differences ($p > .05$) were not found between mastery experiences, vicarious learning, affective states, and age.

Table 3
Intercorrelations Between Computer Self-efficacy Subscales

Subscale	1	2	3	4	5
1. Mastery Experiences	—	.16*	.18*	.57**	.05
2. Vicarious Learning		—	.30**	.06	-.05
3. Social Persuasion			—	.15*	-.28**
4. Affective States				—	.01
5. Age					—

Discussion

Mastery Experiences

The most influential source of efficacy information is attributable to performance - mastery experiences (Bandura 1977, 1986, 1995). Mastery experiences may serve to enhance or to diminish self-efficacy beliefs (Hackett & Byars, 1996). Generally, it is believed females are less likely to exhibit computer confidence, however, in the present study mean scores indicated females possess more confidence in their computer competence than males.

Vicarious Learning

Learning from role models can be influential when models or modeled activities are exhibited (Hackett & Byars, 1996). Limited exposure to modeled behavior may have contributed to the low mean score of vicarious learning. The importance of interactive learning is apparent from the finding that individuals who owned a personal computer had a higher vicarious learning scale mean than individuals who did not own a personal computer. Modeled usage of personal computers, as a household and educational tool, will increase vicarious learning opportunities.

Social Persuasion

Verbal messages such as encouragement may contribute to a heightened sense of self-efficacy (Bandura, 1995). The inverse relationship that was found between age and social persuasion in this study suggests older participants received less social persuasion.

Affective States

Coping efficacy is merely confidence in one's abilities to manage complex and difficult situations (Hackett & Byars, 1996). Computer anxiety undermines computer self-efficacy beliefs (Ertmer, Evenbeck, Cennamo & Lehman, 1994). This study found computer mastery experiences reduced computer anxiety. The correlational results between affective states and mastery experiences indicate the need for quality computer experiences to alleviate computer discomfort and increase computer self-efficacy beliefs.

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Meeting the Technology Staff Development Needs of Elementary Teachers

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Abstract

U.S. schools spend an average of 55 percent of their technology budgets on hardware and 30 percent on software. Little money is left for technology training for teachers. Because business education teachers are called upon to teach technology staff development (SD) to teachers in other disciplines, determining which SD courses to offer and when to offer them is a necessary step. The purpose of this study was to determine what technology SD course content was perceived beneficial by elementary teachers and which areas of computer use were increased. In addition, a teacher-preferred SD course timetable was developed.

Background

The current presidential administration has recognized the need and importance of teacher training. The 1999 budget request included special emphasis on teacher training with a proposed 75 million dollar fund to assist in the training of new teachers in technology (Salpeter, 1998). Grants would be made available for the technology training of pre-service teachers. But what about those currently teaching and immersed in technology? Technology staff development courses are the answer.

The report Teachers and Technology: Making the Connection (1995) found that U.S. schools spend an average of 55 percent of their technology budgets on hardware and 30 percent on software. An additional study of Georgia elementary school teachers found that 98% of the participants had computers in their classroom (McCannon & Crews, 1999, In Press). With the implementation of technology in schools, staff development (SD) has become a necessary part of an evolving training paradigm. Holzberg (1997) noted the importance of SD by stating "with renewed emphasis on technology-enhanced education, staff development is more essential than ever" (p. 34). Yet, Mather (1996) reported that only 48 percent of teachers studied stated that they had participated in professional development on the uses of educational technology. The drive for technology in schools and lack of teacher participation in technology-based SD offerings has led researchers to question current technology SD courses.

The definition of SD has changed as education and the needs for SD has changed. It has mainly been thought of as courses teachers took either by choice or to continue their teaching certification. Sparks (1984) stated that SD is commonly considered as "any training activity that helps teachers improve teaching skills" (p. 72). Most people agree that SD is implemented to increase teacher effectiveness with a goal of improved instruction. As "the school serves as a mirror reflecting the changing and escalating demands of society" (Fitch and Kopp, 1990, p. 3), it is important that effective SD be implemented. Effective SD should be consistent, have clear objectives, and include administrative support. It should also "move professional staff from what is to what should be" (Fitch and Kopp, 1990, p. 5).

The creation of effective SD courses is essential; however, they must be scheduled at optimal times with relevant content. With convenient times and timely content, teachers are more likely to be motivated and enthusiastic about SD courses. As Holzberg (1997) states "enthusiasm is contagious for technology integration to be successful at the school level, never underestimate the power of enthusiasm" (p. 36).

Prior to the creation of quality staff development courses, one must "start by assessing the professional development needs of your teachers" (Kajioka, 1998, p. 68). Involving teachers at this stage of planning will result in SD courses with the relevant content that is desired (Cairns, 1990; Ediger, 1998; Hope, 1997; and Meltzer & Sherman, 1997). Discussing SD course content with teachers or having them complete a simple SD course content questionnaire could complete this needs analysis. Bradshaw (1997) notes that "staff development that responds to teachers' concerns and provides follow-up support will increase the likelihood of implementation" (p. 86).

Incentives and rewards for educators to participate pose a challenge for many school systems. Many methods have been investigated. The extrinsic benefit, financial compensation, is desirable, but could possibly put a burden on the school district. Other procedures such as release time, contractual obligations, points for professional growth, certificates, and recognition are viable options (Fitch and Kopp, 1990).

Incentives and rewards are important parts of SD, but support is also a key component in SD implementation. Principals must be willing to recognize a teacher's efforts to participate in SD courses (Hope, 1997). Support comes in many forms. Bradshaw (1997) found support came in ways such as visualizing and planning for the needs of the teachers, as well as financial support. Lovely (1996) found that support came in the form of rewards such as release time, equipment, or money. Miller (1997) states that continuing education credits are reliable forms of support. Support also includes using teachers as resources. Involving and utilizing teachers and their knowledge forms a bond of trust which in turn radiates support.

A desirable time schedule for the SD courses is also important. Time is scarce and valuable to teachers. Schools have tried various means of scheduling the SD courses. Hawkins (1994) suggests using release days or district-designated times when more time is available. Shelton and Jones (1996) state that two or three hour modules at the end of the day are best. Miller (1997) found sessions that lasted two hours a week for five weeks were satisfactory.

Assessing the teachers' needs, implementing appropriate incentives, obtaining support, and developing an appropriate timetable all help to answer the question "Why SD?" With the components in place SD can increase the knowledge base and continue the need for self-renewal (Wideen and Andrews, 1987).

Reasons for teachers not participating in SD courses should also be investigated. McCannon and Crews (1999, In Press) found three main reasons for a lack of participation:

1. SD courses held at inconvenient locations
2. No interest in the content area of the SD courses
3. Other
    a. Haven't taken the time
    b. No stipends offered for participation
    c. No time given during the school day

These relate back to previous suggestions of involving teachers for content, timetables, incentives, and support. Without these components, a lack of participation will occur. Consequently, the quality of SD courses will be below par and poorly attended. Because business education teachers are called upon to teach SD to teachers in other disciplines, determining which SD courses to offer and when to offer them is a necessary step.

Purpose

A previous study by the authors examined current technology SD courses available to teachers. The purpose of the current study was to determine what SD course content is perceived beneficial and which areas of computer use were increased. In addition, a teacher-preferred SD course timetable was developed.

Methodology

Due to the recent influx of funds earmarked for education, the number of computers purchased for schools has increased; however, training teachers to use those computers in the classroom has not been funded as heavily. Georgia teachers are in this situation and therefore were chosen for this study. Elementary school teachers were chosen because they have been the last ones to have technology placed into their classrooms.

The survey instrument was created by the researchers and pilot tested by a group of teachers. After revisions to the instrument, 250 instruments were mailed out to randomly selected Georgia elementary school teachers from kindergarten through fifth grade. One hundred and twenty-seven usable instruments were returned for a response rate of 50.8%.

The questionnaire listed technology-based SD courses divided into three groups: software, hardware, and other. The study participants first noted the SD courses in which they have participated. Staff development courses in which they participated included word processing, operating systems, database, spreadsheet, drawing/painting, software troubleshooting, presentations, and other. Taking into consideration those SD courses taken, the participants then ranked the three SD courses that they considered most beneficial (see Table 1). The participants also ranked the three preferred timeframe choices in which to participate in SD courses. Staff development timeframe choices for both the school year (see Table 2) and the summer months (see Table 3) were included. Participants were also asked to note the areas in which they believed their computer use increased. (see Table 4).

Findings

Respondents

One hundred percent of the respondents were female. The highest percentage of the respondents were veteran teachers with 29% of them having 16-20 years of teaching experience; the experience of other respondents included 11-15 years (23%); and 21-25 years (20%). Sixty-one percent of the respondents teach in suburban schools, and participants were evenly distributed among grades kindergarten through fifth.

Beneficial Staff Development

From the 15 technology SD course choices, the following were ranked as the three most beneficial by the participants: (1) word processing (28%), (2) curriculum integration (19%), and (3) operating systems (12%). Research using the Internet was listed next with 5%. All other categories ranged from 0-3% and were obviously not beneficial to the majority of the respondents.

Preferred School Year Timetable

From the eight school year timeframe choices, the following were ranked as the three most desired by the participants: (1) meet two hours for five afternoons once per week for five weeks (43%), (2) meet two and one half hours two afternoons per week for two weeks (17%), and (3) meet two hours for five afternoons in the same week (11%). The large span between the first and second timeframe choice note the obvious importance of the first choice. Timeframes ranked fourth through eighth were ranked by 10% or less of the respondents noting less interest.

Preferred Summer Timetable

From the 13 summer timeframe choices, the following were ranked as the three most desired by the participants: (1) meet two hours for five mornings in the same week (42%), (2) meet five hours on any two weekdays in the same week (33%), and a tie for third (3) meet two and one half hours two mornings per week for two weeks or meet two hours for five afternoons in the same week (5% each). After the top two choices of timeframes, the third choice was a considerably lower choice. After the third choice, the percentages dropped to 2-0%.

Computer Use Increase

From the nine choices for areas of computer use improvement, the following were ranked the top three most improved ways in which the participants refined their skills: (1) I have increased my use of the computer for administrative purposes (61%), (2) I can solve more software problems (48%), and (3) I do more research using CD-ROM (35%). The fourth (I use the computer for tutorial purposes) and fifth (I have increased my use of the Internet and World Wide Web) increased benefits were rated closely (29% and 28% respectively). Solving more hardware problems and enhancing lectures and presentations were rated sixth and seventh respectively. The other ratings were 5% or less noting little benefit.

Discussion

With technology being incorporated into and enhancing the classroom, the need for quality SD courses is necessary. To enhance participation in the SD courses, and make sure teachers obtain current technology information, it is necessary to support SD courses with beneficial content, as well as establish and follow a teacher-preferred timetable for SD offerings. To develop beneficial course content and establish a convenient timetable, it is necessary to involve teachers in the planning process.

Word processing being noted as the top beneficial SD course relates to the need for word processing skills in teachers' lives. Word processing skills enhance administrative tasks (i.e., the creation of tests, newsletters, and reports). Curriculum integration was also noted as a beneficial SD course as it is essential to be able to adapt the technology to cross-curricular needs. Due to the fact that elementary teachers teach a variety of subjects and the prevalence of technology, curriculum integration would be very beneficial.

The most preferred SD course timetables are obviously due to teachers' ability to attend the courses offered. The summer months are less restricting than the school year; however, in both situations, Saturdays and evenings were not desired choices. With family and personal goals and activities, often Saturdays and evenings are not the best option for offering SD courses. During the summer, it was also important that the SD courses were completed during the same week. This leaves the weekends available for personal obligations. The school year preference was to meet two or two and one half hours per SD session. This would allow SD course sessions to be completed on a timely basis and allow teachers to be home at a reasonable time.

An increased use of the computer to help with administrative tasks is essential for a teacher. The creation of tests, upkeep of an electronic gradebook, and parent letters are all time consuming tasks; therefore, with computer integration into those tasks, the teacher would be more efficient and able to save time. Solving software problems and utilizing the CD-ROM for research are necessary areas for increased computer use. Problem solving on an individual basis helps teachers become more self-sufficient in the classroom. CD-ROM research enhances the ability to obtain more information for class projects and develop searching skills without going to the media center. This allows for more current information to be incorporated into the classroom. The increased computer use makes the teacher more confident and willing to use technology. Technology and the teacher's increased use of technology will allow for the introduction of new materials/subjects and for self-paced tutorials.

Recommendations

The following are recommendations based on the findings and conclusions.

1. Staff development trainers should focus on the areas of word processing, curriculum integration, and operating systems.

2. Further SD courses should be determined by participant interest to increase computer use in necessary areas.

3. Staff development trainers should provide courses in two or two and one half-hour blocks after school hours.

4. Staff development trainers should provide courses in one-week periods during the summer months.

5. Staff development trainers should provide courses during the summer months in the morning or afternoon, but refrain from evening or Saturday classes.

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Table 1
Most Beneficial SD Courses

SD Courses Noted Most Beneficial	Percentage
Word Processing	28%
Curriculum Integration	19%
Operating Systems	12%
Research Using the Internet/WWW	5%
Software Troubleshooting	3%
Spreadsheet	2%
Hardware Troubleshooting/Maintenance	2%
Networking	2%
Administrative	2%
Research Using the CD-ROM	2%
Other	2%
Database	0%
Presentation	0%
Drawing/Painting	0%
Keyboarding Techniques	0%

Table 2
SD Course Timetable for School Year

School Year Timetable Choices	Percentage
Meet 2 hours for 5 afternoons once per week for 5 weeks	43%
Meet 2.5 hours 2 afternoons per week for 2 weeks	17%
Meet 2 hours for 5 afternoons in the same week	11%
Meet 5 hours on 2 Saturdays	9%
Meet 2 hours for 5 evenings once per week for 5 weeks	5%
Other	4%
Meet 2.5 hours 2 evenings per week for 2 weeks	2%
Meet 2 hours for 5 evenings in the same week	1%

Table 3
SD Course Timetable for Summer

Summer Timetable Choices	Percentage
Meet 2 hours for 5 mornings in the same week	42%
Meet 5 hours on any 2 weekdays in the same week	33%
Meet 2.5 hours 2 mornings per week for 2 weeks	5%
Meet 2 hours for 5 afternoons in the same week	5%
Meet 5 hours on 2 Saturdays	2%
Meet 5 hours on any 2 weekdays for 2 weeks	2%
Other	2%
Meet 2 hours for 5 mornings once per week for 5 weeks	1%
Meet 2.5 hours 2 afternoons per week for 2 weeks	1%
Meet 2 hours for 5 afternoons once per week for 5 weeks	0%
Meet 2 hours for 5 evenings in the same week	0%
Meet 2 hours for 5 evenings once per week for 5 weeks	0%
Meet 2.5 hours 2 evenings per week for 2 weeks	0%

Table 4
Computer Use Increase

Area of Computer Use Increase	Percentage
I have increased my use of the computer for administrative purposes (test, electronic gradebook, parent letters, etc.)	61%
I can solve more software problems.	48%
I use the CD-ROM for research.	35%
I use the computer for tutorial purposes.	29%
I have increased my use of the Internet and World Wide Web.	28%
I can solve more hardware problems.	23%
I have increased my use of the computer to enhance lectures and presentations.	19%
I can solve more network problems.	5%
Other	4%

Most Common Grammatical Errors Made by Undergraduates as Perceived by Business Communication Professors by Years of Teaching

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Abstract

Despite students having graduated from high schools and having one or two years of English at the college level, business communication professors are still finding that some of their students have not mastered the basic building block of grammar. Since employers do not want to hire employees with poor writing skills, business communication professors must use valuable class time reviewing the basic tenets of writing. The purpose of this study was to determine what business communication professors perceived as the most common grammatical errors made by their students in business communication courses. In addition, this study was to determine if there were similarities and differences in professor perceptions by their years of teaching experience.

Introduction

Imagine an elementary school classroom. The teacher tells the students to take out paper and pencil to write a paragraph. Johnny waves his hand and calls out "I ain't got no pencil." "No, no Johnny," the teacher admonishes. "I don't have a pencil, he doesn't have a pencil, we don't have any pencils, they don't have any pencils." Johnny interrupts in disgust, "Ain't nobody got no pencils?" (Brown, 1987, p. 31). A cute story when it involves an elementary student. Imagine though if that same scenario involved a college student. The situation becomes much more serious.

Unfortunately, grammatical errors are still a problem for some college students. Since employers do not want to hire employees with poor writing skills, business communication professors must do everything possible to ensure that students can write effective business correspondence and reports. Covering grammar and punctuation topics is part of the process. However, with so many areas that need to be included in a business communication course, it is sometimes difficult to determine how much time should be spent on grammatical errors. If it could be determined what the most common grammatical errors were, then those errors could be covered in detail. There would still be time for adequate coverage of other business communication areas.

Background

Writing errors have been studied in various formats over the years. However, the articles found all had one central theme: improving one's writing skill.

Some of the studies found focused on the writing errors committed by people who use English as a second language. Yang (1994) studied all English as a Second Language (ESL) students at a college in California. The study concluded that the grammatical errors were the most serious, followed by spelling errors, punctuation errors, and lexical errors. Lukas (1995) studied the grammar errors made by Indonesian students and found that they had the most trouble with verb tenses, punctuation, deletion of articles, and single vs. plural nouns. Jung (1996) studied how Korean learners of English use the English passive in terms of forms, meanings, and functions and found problems with role prominence and abrupt topic shift.

Another group of articles centered on the writing errors found in business writing by professionals. These articles listed examples of problems such as usage errors (Grazian, 1996), miscellaneous grammatical errors (Allison, 1993; Top Ten, 1991), and subject and predicate agreement (Hart, 1993). However, some of the articles focused on the technological advances in business writing. These articles (Nimershein, 1992; Productivity Plus, 1997; and Simkin, 1991) compared various grammar checkers and spell checkers and discussed how they could help the writing process.

Some of the research concentrated on the college students' writing problems. Martin and Ranson's 1990 research examined the spelling capabilities of university juniors and seniors. They found that overall these students were poorer spellers than previous groups. In addition, they found that males were poorer spellers than females were. They also found that the more hours per week people were employed while in college, the poorer they spelled.

Connors and Lunsford (1988) focused on the frequency of formal errors in college writing. They studied 3,000 papers from freshmen college students and ranked the errors by the number of errors found in the papers. The top five errors found were: no comma after introductory element, vague pronoun reference, no comma in compound sentence, wrong word, and no comma in non-restrictive element. However when compared with previous studies by Johnson (1917) and Witty and Green (1930), the authors concluded that "American college freshmen were committing approximately the same number of formal errors per 100 words as they were before World War I."

Sloan (1990) did a similar study except that he compared the frequency of writing errors by college freshmen with professional writers. The students' writing came from twenty 500-word essays written in an introductory composition course. The professionals' writing came from twenty essays from the second edition of Penfield's *Short Takes: Model Essays for Composition*. However, Sloan examined only the first 500 words of those essays. The students' top five errors were spelling errors, comma errors (excluding comma splice), word choice errors, pronoun reference errors, and verbiage errors. The professionals' top five errors were triteness, comma errors (excluding comma splice), verbiage errors, structural ambiguity, and pronoun reference errors.

Williams, Scriven, and Wayne (1991) narrowed their research on writing problems by examining similar words that business communication students confuse most often. Three hundred and fifty three students took 16 tests over the course of the semester. The students were asked to read a sentence and choose the correct word from two similar words for that sentence. The researchers found that the top five word pairs that students most often missed were anxious/eager, people/persons, avert/avoid, fortuitous/fortunate, and all right/alright.

Other articles concentrated on ways to correct errors in writing. Best (1990) suggested that teachers make corrections that are nonthreatening and constructive by marking one type of error per assignment at first. The students then feel that their errors are manageable. Once the students have mastered the primary error, the teacher can move on to the other errors.

Raimes (1991) suggested there are six strategies for correcting errors in writing. One strategy was to establish error priorities by giving the most attention to those writing errors that impede the comprehension. Another strategy was to focus on making errors interesting and intellectually engaging by discussing where errors come from and why students make errors.

Davidheiser (1996) took a different approach to error correction by proposing that student-centered grammar groups be formed. In his model, group members are assigned to oversee and correct the final draft of sentences until they have reached a consensus. Next, the groups are asked to write one or two sentences on the board. The class must accept or correct these sentences. He found that learning grammar in groups was satisfying to both the students and the instructors.

Purpose

The purpose of this study was to determine what business communication professors perceived as the most common grammatical errors made by their students in business communication courses. In addition, this study was to determine if there were similarities and differences in professor perceptions by their years of teaching experience. Business communication was defined as any course that teaches students how to write business correspondence, reports, and proposals so business communication, technical writing, and report writing courses were included. Basic English courses were not included.

Method

The researchers developed the survey and it was pilot tested by various business communication professors. The revised survey was mailed to 510 randomly selected members of the National Association of Business Communication (ABC). One hundred and eighty-seven usable surveys were returned for a response rate of 36.6%. Members of ABC were chosen as the target population because many of them are responsible for teaching undergraduate business communication courses.

From the 187 surveys returned, 123 (66%) of the respondents indicated that they had taught a business communication course in the last five years. From a list of 15 grammatical errors, the respondents were asked to rank the most common grammatical errors that they perceived were made by their business communication students (1 = most common to 5 = least common). The grammatical errors list was derived from various sources including business communication textbooks, business English textbooks, journal articles, and reference books. The responses were then weighted. A respondent's first error choice was given five points, second choice four points, etc. The points for each choice from all the respondents were summed and then ranked from highest to lowest points received. Each error could have received a maximum of 615 points if all respondents had given it the top ranking.

Findings

Business Communication Courses

Specific questions were asked about the business communication courses to gain an understanding of how they are offered at various institutions. Sixty-eight percent of the respondents indicated that the business communication course was taught in the Department/School/College of Business. Thirty-eight percent responded that one prerequisite was necessary while 29% answered that two prerequisites were necessary. Class standing was also a prerequisite for 28%. Fifty percent of the respondents indicated that students were encouraged to take this course in their junior year. Forty percent responded that students were encouraged to take this course in their sophomore year.

Years of Experience

Of the 123 respondents, 24% had taught for 16-20 years, 20% had taught for 11-15 years, 13% had taught for 1-5 years, 13% had taught for 6-10 years, 11% had taught for 21-25 years, and 9% had taught for 26-30 years. The other 10% fell either in the category of less than 5 years or more than 30 years. Those responses were not included in the calculations.

The top five errors as determined by the total respondents were as follows:

1. Subject-Verb do not agree
2. Sentence fragment
3. Subject-Pronoun do not agree
4. Lists in a series not in parallel structure
5. Wrong word choice

When the grammatical errors were examined by years of experience, the top three errors in each group stood out from the rest of the items. After the top three choices, the points tapered off considerably for the rest of the choices. Table 1 shows the top three choices for each group by years of experience.

Table 1
Most Common Grammatical Errors as Determined by Professors' Years of Experience

Error	1-5	6-10	11-15	16-20	21-25	26-30
Sentence fragment	1			2	2	2
Subject-Verb do not agree	2		1	1	1	1
Wrong word choice	3		3			
Lists in a series not in parallel structure		1		3		
Vague pronoun reference		2				
Subject-Pronoun do not agree		3	2		3	3

Discussion

All choices selected by the total group appeared as top choices when broken down by years. However, "vague pronoun reference" did not appear as a top five choice by the entire group but was selected by the group with 6-10 years experience.

The grammar error "Subject-Verb do not agree" garnered the most points as it was selected number one or two by five of the six groups. That error may be the one noticed most often because subject and verb agreement is the basic building block of a sentence. The error "Sentence fragment" was next highest in points and it also goes back to the basic elements of a sentence. When a sentence does not have a verb, it cannot help but stand out as incorrect.

The error "Subject-Pronoun do not agree" received the third highest number of points. Respondents who commented on the survey said the most common subject-pronoun disagreement was a singular noun with a plural pronoun such as "student-their."

The errors "Lists in a series not in parallel structure" and "wrong word choice" were mentioned by only two groups as being the top common errors, and the error "vague pronoun reference" was mentioned by only one group. Because these errors may not affect the overall readability of a sentence as much as the other errors, they may not have seemed as important to the other groups.

What is most discouraging is that despite the availability of grammar checkers, writing labs, and programs devoted to writing not much has changed since Connors and Lunsford (1988) and Sloan (1990) completed their studies. Students are still making the same types of errors they did a decade ago. Colleges are still producing some graduates who do not have good written communication skills.

Recommendations

Business communication professors may want to take information from this research and begin their grammar and writing discussion with examples of these types of errors. In addition, they may want to collaborate with the English professors and the writing labs to have them emphasize these errors as they work with students.

Future research may want to examine the grammatical errors made by students working on a masters degree. In addition, we may want to consider what business and industry leaders consider the most common errors their employees make and compare them with the results of this study for similarities and differences.

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Pacific Rim Business Students' Perceptions of Six Representative English-Language Accents

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Abstract

Perceptions about six representative English-language accents were gathered from prospective and practicing business people enrolled in four sections of an introductory business-communication course in a United States-based university located in the middle of the Pacific Rim region. The well-established matched-guise technique was used to gather the data. Overall Pacific Rim respondents ranked the studied English-language accent guises in this order: first, General American English; second, Received Pronunciation English; third, Australian English; fourth, Estuary English; fifth, Indian English; and sixth, Japanese English. Four statistically significant differences were found to be related to ethnicity-based differences. Attribute profile patterns constructed from respondents' mean ratings revealed individualistic patterns for all accents.

Introduction

Although English is widely considered to be the worldwide dominant business language (Colback & Maconochie, 1989), it exists in many varied forms worldwide (Kameda, 1992). Progressive business people are increasingly wanting to know which English-language accent(s) might give them a competitive advantage over those who speak other accents (DeShields, Kara, & Kaynak, 1996), especially in the important Pacific Rim marketplace. They realize that they would benefit from knowing how both native and nonnative English speakers perceive representative English-language accents, the language tools on which they rely as they transact international business (Scott, 1996). These perceptions of English-language accents affect important business and communication decisions and relationships and are among factors business people need to know to make informed decisions related to the highly competitive international marketplace (Scott, Green, & Rosewarne, 1997). Nevertheless, almost nothing is known about perceptions of English-language accents from any business-related perspective.

The purposes of the reported study were (a) to identify perceptions of United States-based business students from Pacific Rim countries regarding six representative English-language accents and (b) to examine differences between these perceptions and ethnicity. The research questions were the following:

1. What is the rank order of the representative English-language accents?
2. What are the ethnicity-based differences related to perceptions of representative English-language accents?
3. What are the attribute profile patterns of representative English-language accents?

Literature Review

A comprehensive literature search uncovered only three studies—Chiba, Matsuura, and Yamamoto (1995); DeShields et al. (1996); and Scott et al. (1997)—about perceptions of English-language accents from the standpoint of prospective or practicing business people, confirming a major void in both the business and linguistic literatures. The authors of the latter study recommended that a replication be conducted in a different part of the country. A second article related to the latter study focused attention on the perceptions of the nonnative English speakers who participated in the study, about 12% of the total respondents (Scott, Green, & Rosewarne, 1998).

The literature review found that linguisticians have conducted a few related studies, which suggested research approaches including the matched-guise technique, representative English-language accents, and demographic variables. Few of the studies included a range of varieties of one language or native and nonnative speakers of English. Only the Scott et al. (1997) study focused attention exclusively on business students—prospective and practicing business people—in the Intermountain West region of the United States enrolled in required business-communication courses.

In the early 1970s Giles (1970, 1971a, 1971b, 1972) conducted a series of studies that investigated native speakers' perceptions about British English accents. Flaitz (1988) found that native French speakers of English usually preferred the British, not the American, accent model for pronunciation purposes. Various researchers, including Al-Kahtany (1995), Chiba et al.(1995), Rubin and Smith (1990), and Seggie (1983), have repeatedly found that more prestigious, not less prestigious, English-language accents receive consistently higher ratings.

Rosewarne (1985) found that when residents of the United Kingdom who are advanced-level nonnative English speakers ranked representative English-language accents, this rank order resulted: first, Received Pronunciation English; second, General American English; third and fourth (tie), Australian English and Estuary English; and fifth and sixth (tie), Indian English and Japanese English. When Rosewarne (1990) replicated the study with teachers of English as a foreign or second language and students, he reported this rank order: first, Received Pronunciation English; second, General American English; third, Australian English; fourth, Estuary English; fifth, Indian English; and sixth, Japanese English. Scott et al. (1997) found that native and nonnative English speakers combined in required business-communication courses in the Intermountain West region of the United States ranked representative English-language accents in this order: first, General American English; second, Received Pronunciation English; third, Australian English; fourth, Indian English; fifth, Estuary English; and sixth, Japanese English. Scott et al. (1998) also found that nonnative English speakers in required business-communication courses in the Intermountain West region of the United States ranked representative English-language accents in this order: first, General American English; second, Received Pronunciation English; third, Australian English; fourth, Estuary English; fifth, Indian English; and sixth, Japanese English.

Lambert, Hodgson, Gardner, and Fillenbaum (1960) devised the employed matched-guise technique. Osgood (1964) enhanced the matched-guise technique when he developed the semantic differential scale rating procedure, which incorporates bi-polar scales for reporting perceptions and has become an integral part of the matched-guise technique (Agheyisi & Fishman, 1970). Williams (1974) later questioned if researcher-supplied scales constrained respondents' perceptions and if nonnative English speakers fully understood the scale-label meanings. Wilson and Bayard (1992) noted that when semantic differential scales are used, male speakers are rated more favorably on personality criteria than female speakers are. Summarizing more than 30 years of matched-guise research, Cargile, Giles, Ryan, and Bradac (1994) emphasized that respondents who use the matched-guise technique can indicate definite and consistent attitudes toward those who use specific accents.

Thus, the relevant literature confirms that business-related research about perceptions of English-language accents is clearly needed (a) to help business people derive maximum effectiveness from the English language as a competitive tool in the international marketplace and (b) to fill major gaps in the literature. Related studies provided methodological guidance.

Research Methodology

The matched-guise technique is the most often used linguistic research technique for gathering comparative data about accent-related perceptions by using selected accents as the only study variables. The repeated recordings of the same culturally neutral announcement delivered in various accents by one male phonologist constituted the matched guises in the study. These multiple recordings included the same message delivered in these accents: General American English, Received Pronunciation English, Estuary English, Australian English, Indian English, and Japanese English. Information about these accents can be found in *The Cambridge Encyclopedia of the English Language* (Crystal, 1995). These accents encompass all major types of English-language accents—indigenous, transplanted, new, and nonnative—and are representative of the variety found within the family of world Englishes.

A panel of English speakers validated the accent recordings, and the six studied accents came from the large number correctly identified by all validators. A group of advanced-level nonnative English speakers provided adjectival impressions of the speakers of the study guises, and these impressions were manipulated to construct the labels for the 14 semantic differential scales, 8 of which were within Lambert's (1967) personality criteria categories of competence, personal integrity, and social attractiveness. This approach ensured that for native and nonnative English speakers the labels on the semantic differential scales were intelligible.

A practice activity was recorded so that respondents would understand how to record their accent-related perceptions on the semantic differential scales. These seven-point scales ranged from extremely negative to extremely positive aspects of accent attributes.

Distractor guises or accent recordings that are not studied were incorporated into the study (a) to expose the respondents to more voice variety and (b) to reduce the likelihood that respondents would figure out that all six studied accents had been recorded by the same phonologist. Having one speaker for all studied accent guises eliminated variables associated with age, voice pitch, speech speed, and emotional reactions of respondents to voice qualities. Having taped guises eliminated variables associated with physical appearance, paralinguistics, and physical context.

A random-number process was used to sequence the studied and distractor guises. The research materials were pilot tested before and after they were adapted for use in the United States to ensure that they were free of apparent defects.

Data for the study were gathered at a United States teaching university located in the middle of the Pacific Rim region. The institution was selected because it enrolls a diverse mix of native and nonnative English speakers from Pacific Rim countries. To further ensure a varied population of prospective and practicing business people for sampling purposes, respondents from intact sections of the required business-communication course were targeted for participation. The teacher of the introductory course received training from one of the primary researchers prior to gathering study data.

During the data-gathering sessions, students (a) learned about the opportunity to participate, (b) signed informed consent forms, (c) provided demographic information, (d) completed the practice activity, (e) listened to the taped guises, and (f) recorded their perceptions on semantic differential scales. For each of the six studied and two distractor guises, respondents recorded their perceptions by circling one number on each of the 14 scales for each of the accent guises. The related standardized item alphas varied from .90 to .95, which suggests a high degree of reliability in the responses.

Descriptive and inferential statistics were calculated using SPSS Release 4.1 for VAX/VMS. Arithmetic means, standard deviations, grand means, and ranking order were determined for each studied accent. Multiple ANOVAs with related Student-Newman-Kuels Multiple-Range tests where appropriate were calculated to assess differences between perceptions of the studied accents and the demographic variables. Attribute profile patterns were created by plotting and connecting the respective arithmetic mean scores on each of the 14 semantic differential scales for each of the studied accents.

Research Findings

The research findings section is divided into four subsections that relate to the respondent profile, the rank order, the ethnicity-based differences, and the attribute profile patterns.

Respondent Profile

Of the 98 students enrolled in the four intact sections of the required business-communication course during the two semesters the data were gathered, 92 students or 94% provided usable study data. There were 45 native English-speaking respondents, 42 nonnative English-speaking respondents, and 5 unclassified English-speaking respondents.

The typical respondent was a 20 to 24 year old native English-speaking Caucasian male majoring in international business, business administration, or computer information systems. He worked part-time in a service-industry position that frequently required him to communicate with international business people who spoke other than the English language. He was proficient for business purposes in one foreign language, typically Japanese, and had traveled abroad for professional purposes.

Rank Order

Respondents indicated their perceptions of each of the studied English-language accent guises by circling numbers that reflected their impressions of speakers on each of the 14 semantic differential scales. Table 1 shows the ranking and grand mean data for the studied English-language accent guises for all respondents. Respondents preferred the General American English accent guise over the other studied English-language accent guises, although the Received Pronunciation English accent guise was a very close second.

Table 1
Ranking and Grand Means for All Respondents

English accent guise	Rank	Grand mean	Standard deviation
All respondents (N = 92)			
General American	1	77.69	12.87
Received Pronunciation	2	76.98	10.97
Australian	3	65.58	12.81
Estuary	4	57.15	13.01
Indian	5	52.80	15.08
Japanese	6	45.83	12.45

Ethnicity-Based Differences

Respondents indicated their ethnicity by checking their primary ethnicity category. The ethnicity-related data were analyzed with the grand mean data for each English-language accent guise. Table 2 shows the grand mean data for the English-language accent guises for ethnicity.

Multiple one-way analysis of variance revealed four statistically significant differences. The first statistically significant difference at the .01 level was for the Indian English accent guise (F-ratio = 7.0269, F Probability = .0097, and D.F. = 1). Caucasian respondents' perceptions were higher than the non-Caucasian respondents' perceptions were at the .01 significance level for the Indian English accent guise. The second statistically significant difference at the .05 level was for the Estuary English accent guise (F-ratio = 5.3389, F Probability = .0234, and D.F. = 1). Caucasian respondents' perceptions were higher than the non-Caucasian respondents' perceptions were at the .05 significance level for the Estuary English accent guise. The third statistically significant difference at the .01 level was for the Japanese En-

Table 2
Grand Means by Ethnicity and English-Language Accent Guise

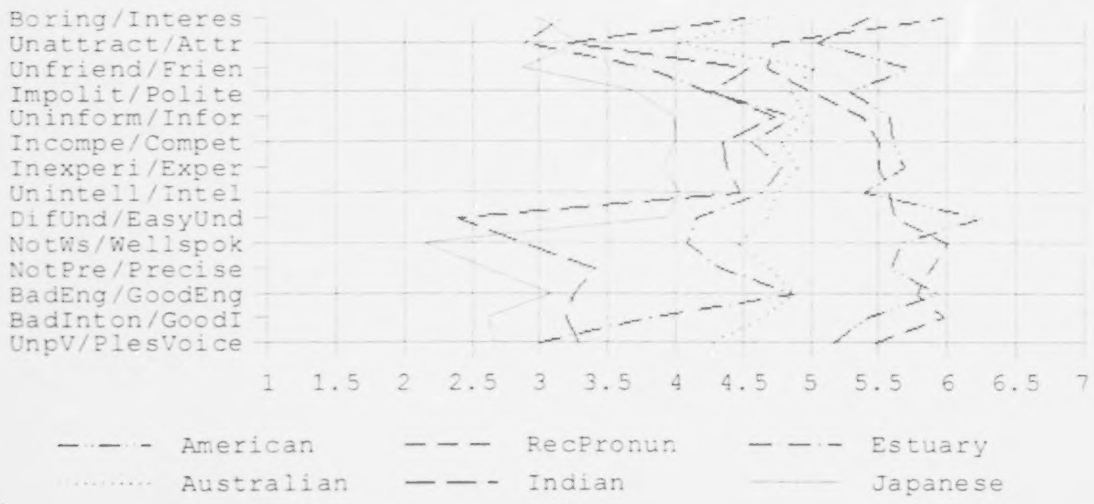
	English-language accent guise					
Ethnicity	**Indian English**	**Estuary English**	**Japanese English**	**Australian English**	**Received Pronunciation English**	**General American English**
Non-Caucasian	50.40	55.03	43.48	63.00	77.40	77.21
Caucasian	59.52	62.12	52.44	72.04	74.96	76.88

glish accent guise (F-ratio = 10.4556, F Probability = .0018, and D.F. = 1). Caucasian respondents' perceptions were higher thanthe non-Caucasian respondents' perceptions were at the .01 significance level for the Japanese English accent guise. The fourth statistically significant difference at the .01 level was for the Australian English accent guise (F-ratio = 9.6199, F Probability = .0026, and D.F. = 1). Caucasian respondents' perceptions were higher than the non-Caucasian respondents' perceptions were at the .01 significance level for the Australian English accent guise.

Attribute Profile Patterns

Respondents indicated their perceptions about the English-language accents by circling numbers that reflected their impressions of speakers on 14 semantic differential scales for each of the English-language accent guises. The arithmetic mean was determined for each scale for each of the studied English-language accent guises, and the data for each accent attribute were used to construct its attribute profile pattern. Figure 1 shows the attribute profile pattern for each of the studied English-language accent guises.

Figure 1
Semantic Differential Scale Profile Patterns for the General American English, Received Pronunciation English, Estuary English, Australian English, Indian English, and Japanese English Accent Guises for Pacific Rim Respondents



Note. Boring/Interes = Boring/Interesting; Unattract/Attr = Unattractive/Attractive; Unfriend/Frien = Unfriendly/Friendly; Impolit/Polite = Impolite/Polite; Uninform/Infor = Uninformative/ Informative; Incompe/Compet = Incompetent/Competent; Inexperi/Exper = Inexperienced/Experienced; Unintell/Intel = Unintelligent/ Intelligent; DifUnd/EasyUnd = Difficult to understand/Easy to understand; NotWs/Wellspok = Not Well-spoken/Well-spoken; NotPre/Precise = Not Precise/Precise; BadEng/GoodEng = Bad English/Good English; BadInton/GoodI = Bad intonation/Good intonation; and UnpV/PlesVoice = An unpleasant voice/A pleasant voice.
Note. 1 = extremely (negative characteristic); 2 = rather (negative characteristic); 3 = somewhat (negative characteristic); 4 = neither (negative characteristic) nor (positive characteristic); 5 = somewhat (positive characteristic); 6 = rather (positive characteristic); and 7 = extremely (positive characteristic).
Note. American = General American English accent guise; RecPronun = Received Pronunciation English accent guise; Estuary = Estuary English accent guise; Australian = Australian English accent guise; Indian = Indian English accent guise; and Japanese = Japanese English accent guise.

Overall the attribute profile patterns for the General American English and the Received Pronunciation English accent guises were the highest rated ones and were generally similar. Nevertheless, the respondents clearly differentiated among the studied English-language accent guises on each of the 14 semantic differential scales. Overall the attribute profile patterns for the Indian English and the Japanese English accent guises were the lowest rated ones and were generally similar.

Discussion

The discussion section is divided into four subsections that relate to the respondent profile, the rank order, the ethnicity-based differences, and the attribute profile patterns.

Respondent Profile

The 46% nonnative English-speaking rate found in the sample, while about 15 times the national average, approximates the rate of nonnative English speakers found at the sampled university. Since the university is located in the middle of the Pacific Rim region and since it draws its students from throughout the Pacific Rim region, this unusually high rate of nonnative English-speaking students is to be expected.

The Pacific Rim respondents were similar to those in the Scott et al. (1997) Intermountain West study in terms of most demographic factors, including age, major, employment status, employment industry, proficiency for business purposes in multiple languages, and travel abroad for professional purposes. They differed from those in the Scott et al. (1997) study in terms of the typical language spoken for business purposes besides English and in terms of their working in positions that frequently required them to communicate with international business people who spoke other than the English language. These differences are also to be expected since the sample is drawn from a university in the middle of the Pacific Rim region. While the non-American Pacific Rim respondents in the Scott et al. (1997) study conducted in the Intermountain West region of the United States were from Indonesia, Japan, Malaysia, Peoples Republic of China, Singapore, South Korea, Taiwan, and Thailand, the non-American Pacific Rim respondents in the current study conducted in the Pacific Rim region of the United States were from the Cook Islands, Fiji, French Polynesia, Japan, Malaysia, Micronesia, New Zealand, Peoples Republic of China, Philippines, Samoa, Singapore, South Korea, Taiwan, and Tonga.

Rank Order

The rank order subsection is divided into two parts that address ranking information and related usefulness implications.

Ranking information. Overall the rank order of the studied English-language accent guises in this study of Pacific Rim respondents was much like that found in the Scott et al. (1997) study of Intermountain West respondents. In both of these studies, the respondents ranked the General American English accent guise in first place followed closely by the Received Pronunciation English accent guise in second place. The respondents differed on the order of the fourth- and fifth-place English-language accent guises in these two studies, with respondents from the Pacific Rim sample rating the Estuary English accent guise somewhat higher than the Indian English accent guise while the respondents from the Intermountain West sample rated the Indian English accent guise somewhat higher than the Estuary English accent guise. The overall rank order from the Pacific Rim sample matched exactly that of the nonnative English-speaking cohort in the Scott et al. (1998) study of the nonnative English-speaking respondents from the Intermountain West, all of whom originally came from Pacific Rim countries. The fourth- and fifth-place rankings of the Pacific Rim sample matched those of Rosewarne's (1990) African, Asian, European, and Latin American respondents residing in the United Kingdom.

In all of the studies, the respondents preferred the dominant English-language accent of their current country of residence. The overall similarities in response patterns in all of the cited studies suggest a degree of stability in perceptions of English-language accents across cultural groups and countries over a time scale of approximately one decade.

In spite of minor differences in rank order in the studies, one thing is clear: Respondents who are not natives of the United Kingdom do not perceive the indigenous Estuary English accent very favorably. This calls into question its suitability for international business-communication purposes. If business people from Pacific Rim countries respond to the Estuary English accent like the respondents in the Pacific Rim sample of prospective and practicing business people did, then the increasing use of the Estuary English accent by British business people will be poorly received throughout the Pacific Rim trading region—perhaps internationally, too. Business people who speak a more familiar, more easily understood, and more widely accepted indigenous English-language accent such as General American English or Received Pronunciation English will have a competitive advantage over Estuary English speakers if other factors are comparable. Speaking a more internationally acceptable English-language accent could enhance competitive positions and business opportunities in international business.

Usefulness implications. The ranking information may be useful to business people as they select an English-language accent to facilitate domestic and international business. Business-communication teachers can also use the ranking information as they provide comparative information about English-language accents for business-communication purposes.

Ethnicity-Based Differences

The ethnicity-based differences subsection is divided into two parts that address demographic differences related to ethnicity and related usefulness implications.

Ethnicity-related differences. Caucasian respondents from the Pacific Rim sample rated the Indian English, Estuary English, Japanese English, and Australian English accent guises but not the Received Pronunciation English and General American English accent guises higher than the non-Caucasian respondents from the Pacific Rim sample did. While these Caucasian respondents tended to be more accepting of the studied transplanted, new, and nonnative English-language accents than the non-Caucasian respondents were, the non-Caucasian respondents tended to be more accepting of the worldwide dominant indigenous English-language accents than the Caucasian respondents were. Perhaps this is because for the majority of the Caucasian respondents the familiar Received Pronunciation English and General American English accents are taken for granted, while for the majority of the non-Caucasian respondents the Received Pronunciation English and General American English accents are looked up to as the undisputed worldwide English-language standards that they used as their models when they studied the English language at home or abroad. The Caucasian respondents from the Pacific Rim sample perceived the Indian English, Estuary English, Japanese English, and Australian English accent guises higher to a statistically significant degree than did the non-Caucasian respondents from the Pacific Rim sample. Perhaps this suggests that the Caucasian respondents from the Pacific Rim are more comfortable with and accepting of accent variety within the English language than the non-Caucasian respondents from the Pacific Rim region are. Since most formal English as a further language instruction around the world teaches either the Received Pronunciation English or the General American English accent model, the non-Caucasian Pacific Rim respondents may believe that all other English-language accents are substandard and inferior to the Received Pronunciation English and the General American English accents.

In the Scott et al. (1997) Intermountain West sample, Caucasian respondents also tended to rate the Indian English, Estuary English, Japanese English, and Australian English accent guises but not the Received Pronunciation English and General American English accent guises higher than non-Caucasian respondents did. The differences were not statistically significant for the Intermountain West sample, however.

Usefulness implications. The ethnicity-related difference information may be useful to business people in planning their communication strategies and messages. More specifically, business people might realize that the Indian English, Estuary English, Japanese English, and Australian English accents are perceived differently by Caucasian and non-Caucasian respondents.

The ethnicity-related difference information may also be generally useful to business-communication teachers as they instruct prospective and practicing business people. More specifically, business-communication teachers might discuss how the Indian English, Estuary English, Japanese English, and Australian English accents are perceived differently by Caucasian and non-Caucasian people.

Attribute Profile Patterns

The attribute profile patterns subsection is divided into two parts that address profile pattern information and related usefulness implications.

Profile pattern information. The attribute profile patterns for the General American English and the Received Pronunciation English accent guises are similar overall. The General American English accent guise was rated higher than the Received Pronunciation English accent guise in terms of attractiveness, friendliness, politeness, informativeness, competence, experience, intelligibility, and English quality. The Received Pronunciation English accent guise was rated higher than the General American English accent guise in terms of interestingness, intelligence, well-spokenness, preciseness, intonation, and pleasantness.

The attribute profile pattern for the Estuary English accent guise was similar to that for the Received Pronunciation English accent guise but usually had ratings about 1.5 to 2.0 lower on the semantic differential scales. The Estuary English accent guise was rated the lowest of all of the studied English-language accent guises in terms of attractiveness.

The attribute profile pattern for the Australian English accent guise was similar to that for the Received Pronunciation English accent guise but usually had ratings about .5 to 1.5 lower on the semantic differential scales. The Australian English accent guise was the only studied English-language accent guise that had neither the highest nor the lowest rating on any of the semantic differential scales.

Since both the Estuary English and the Australian English accents share common roots in the Cockney speech of London and other localizable and predominately working-class accents of London and southeastern England—albeit some two centuries apart—it would seem logical that their attribute profile patterns might be more alike than they are, especially in terms of interestingness, attractiveness, friendliness, and pleasantness. Why the Estuary English and Australian English attribute profile patterns vary so much on these four semantic differential scales is puzzling and merits further investigation.

The attribute profile pattern for the Indian English accent guise was somewhat similar to that for the Japanese English accent guise with ratings about .5 to 1.0 higher on the semantic differential scales. The Indian English accent guise had the lowest rating of all of the studied English-language accents in terms of intelligibility.

The attribute profile pattern for the Japanese English accent guise was the lowest rated one overall and had the largest number of lowest ratings of all of the studied English-language accents on 12 of the 14 semantic differential scales. Why respondents from the Pacific Rim perceived the Japanese English accent guise uniformly low on so many semantic differential scales is puzzling and merits further investigation.

In the Scott et al. (1997) study of Intermountain West respondents, the overall attribute profile patterns were similar to those of the Pacific Rim respondents, although they were less alike for the Indian English accent guise than for the General American English, Received Pronunciation English, Australian English, Estuary English, and Japanese English accents guises.

Overall the Pacific Rim respondents rated the General American English, Received Pronunciation English, and Estuary English accent guises slightly higher than the Intermountain West respondents in the Scott et al. (1997) study did. Overall the Pacific Rim respondents rated the Australian English, Indian English, and Japanese English accent guises lower than the Intermountain West respondents in the Scott et al. (1997) study did.

In Rosewarne's (1990) study of African, Asian, European, and Latin American respondents residing in the United Kingdom, the respondents also rated the General American English accent guise higher than the Received Pronunciation English accent guise in terms of friendliness.

The many similarities in perceptions of English-language attribute profile patterns in the three studies suggest a degree of stability in perceptions across cultural groups and countries over a period of approximately one decade.

Usefulness implications. The attribute profile pattern information may be useful to business people as they select the most effective English-language accents to use given specific advertising goals. Business people could select a highly rated English-language accent such as the General American English or the Received Pronunciation English accent to positively influence Pacific Rim customers. They could positively shape consumers' perceptions by selecting not only an English-language accent that is highly rated by the targeted group but also one whose semantic differential scale attributes match the desired positive product image. Conversely, business people could select a lowly rated English-language accent such as the Japanese English accent to negatively influence Pacific Rim customers. They could negatively shape consumers' perceptions by selecting not only an English-language accent that is lowly rated by the targeted group but also one whose semantic differential scale attributes match the desired negative product image. This could be especially useful in comparative advertising statements that are disparaging about a competitor's goods or services. To use accent-preference information skillfully, business people must clearly differentiate between advertising for the domestic and international marketplaces since what works well in one marketplace will not necessarily work equally well in another marketplace because of differing perceptions about English-language accents. This is particularly important in the marketing of services where intangible benefits play a crucial role. The English-language attribute profile pattern information may be useful to people who promote products and services—especially advertisers—and the marketing teachers who train them. It may also be useful to business-communication teachers as they provide prospective and practicing business people with comparative information about the attributes of English-language accents perceived by Pacific Rim residents.

Business Educators' Implications

The exploratory study has identified the perceptions of prospective and practicing business people from Pacific Rim countries who are studying at a United States-based university located in the middle of the region regarding representative English-language accents. The study data provide several implications for business educators.

Business people from the Pacific Rim region may need to choose an English-language accent to facilitate the conduct of business at home and abroad. As a result, business educators, especially those who specialize in business communication, may need to make prospective and practicing Pacific Rim business people aware of perceptions about representative English-language accents. They should encourage native English speakers from the United States to select the highly rated General American English accent as their professional and personal accent model. They should encourage others to select either the highly rated General American English or the Received Pronunciation English accent as their professional and personal accent model since except possibly for overseas students studying in Canada and Australia, one of these two accents likely served as the role model when English was learned. Business educators should encourage people who speak other English-language accents to modify their speech over time in the direction of one of these two international standards of the English language because of their widespread intelligibility and acceptability among English speakers around the world. This may require that Australian English speakers either reduce their attachment to their native English-language accent or accept the fact that in the international marketplace their accent may be perceived as somewhat less acceptable than the accents of those who speak General American English and Received Pronunciation English. Ideally, business educators should serve as pronunciation models for their students by using speech that is close to one of the two international standards of the English language, General American English or Received Pronunciation English. Where this is not feasible, training in speaking and presenting skills for nonnative speakers of English should make use of recorded teaching materials that utilize these two accents. Whether standard American or British English pronunciation is the target for a particular group of prospective or practicing business people, the other English-language standard needs to be presented for receptive purposes to enhance message comprehension.

Business people from the Pacific Rim region may need to market their products within the trading region or internationally.

As a result, business educators, especially those who specialize in marketing, advertising, and business communication, may need to make prospective and practicing Pacific Rim business people aware of English-language accent preferences. Since only a few research studies address perceptions of English-language accents in business-related contexts, business-communication specialists, perhaps in partnership with linguisticians, need to conduct additional research to fill the void.

Business people from the Pacific Rim region may need to refine their business-communication strategies and messages to reflect the ethnicity of their customers and the attributes of the chosen English-language accent(s). As a result, business-communication specialists may need to provide prospective and practicing business people with information about the differences in perceptions of English-language accents and ethnicity-based characteristics. Since little relevant information addressing the effects of demographic characteristics exists, additional research needs to be conducted.

Future Research Recommendations

Although this exploratory study has provided basic information about the perceptions of prospective and practicing Pacific Rim business people studying in the United States regarding English-language accents, additional research needs to be conducted.

1. Researchers should replicate this study periodically with refinements as necessary to reflect the ongoing evolution of the representative English-language accents. Replication should occur every five to ten years since Rosewarne's (1985; 1990) studies indicate that accent preferences and ranking orders can change in relatively short periods of time. When data are available from comparable Pacific Rim samples, then the results can be compared diachronically, resulting in a longitudinal study of the evolution of perceptions about English-language accents in the Pacific Rim region. Other business-communication status studies, including those by Green and Scott (1996) and Ober and Wunsch (1991), have suggested the value of gathering longitudinal data to understand better the dynamics of change for business communication-related phenomena. Replication could occur within the same or a different university. Using a different university and obtaining similar results would strengthen the contention that there is nothing unique about the sampled university and its demographic characteristics that unduly influenced its students' perceptions about representative English-language accents.

2. Researchers should replicate this study in other countries with refinements as necessary to accommodate fundamental cultural differences. Since the United Kingdom is the homeland of the other international standard English-language accent, Received Pronunciation English, it would make a good starting point for conducting additional research.

3. Researchers should replicate this study in other major trading regions in the world with refinements as necessary to accommodate fundamental cultural differences. Since the European Union is another major trading region, it would make a good starting point for conducting additional research.

4. Researchers should attempt to answer the questions that this study could not: (a)why Pacific Rim respondents do not perceive the Estuary English and Australian English accent guises more alike in terms of their interestingness, attractiveness, friendliness, and pleasantness and (b) why Pacific Rim respondents perceive the Japanese English accent guise so uniformly low on so many semantic differential scales.

5. Researchers should explore the short- and long-term ramifications of using various English-language accents for business-communication purposes. This might build upon the work that DeShields et al. (1996) have done. This could help business people to use the full potential of English-language accents more effectively than they currently do as a competitive tool in both the domestic and international marketplaces, as well as to strengthen the related literature.

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The Status of Ethics Instruction in Marketing Education

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Abstract

This study explored the status of ethics instruction in Missouri's high school marketing programs. Key findings of the study include (1) ethics instruction is being included in high school marketing programs, (2) ethics instruction is perceived as being effective in changing student attitudes and behaviors by high school marketing teachers, and (3) high school marketing teachers perceive themselves as generally being prepared to teach ethics.

Introduction

Having to deal with ethical dilemmas in a marketing setting is not new. In fact, considerable attention has been focused on how to best prepare college-level marketing students to deal with the ethical dilemmas they will face in the workplace (e.g., Ferrell & Gresham, 1985; Ferrell & Weaver, 1978; Gaidis & Andrews, 1990; Laczniak, 1983). The reason for this attention is clear as the results of many surveys of business leaders reveal that the lack of business ethics is one of the most serious problems facing organizations in the U.S. (Nappi, 1990). As the most visible functional department in a business, the actions of marketing managers are under constant review by the public. Therefore, questionable practices by marketing managers have put many businesses in precarious positions when alleged unethical actions have been uncovered (Hensel & Dubinsky, 1986).

Making the issue of ethical decision making even more complex is the varying nature of what is considered acceptable practice at any given time, by any given group. As expressed by Hensel and Dubinsky (1986) "What is perceived as ethical is influenced by a number of factors including temporal shifts, circumstantial considerations, and subcultural influence." (p. 64) Therefore, fostering the skills to monitor and forecast these fluctuations is critical if managers are to stay within fluctuating social boundaries of acceptable marketing practices (Hensel & Dubinsky, 1986). Staying within socially acceptable marketing practice requires the development of a decision-making criteria that is less utilitarian, more socially-oriented in assessing the costs of making specific marketing practice decisions (Hensel & Dubinsky, 1986). The issue of exploring the social costs of ethical practices for their long-term impact is supported by Nappi (1990) who stated "Whether at the personal or corporate level, ethical behavior requires the ability to see beyond the immediate and one's own self-interest to the long term and the lasting impact of one's actions and decisions." (p. 177)

Goree (1992) noted that graduates are entering the U.S. workforce in a time of ethical chaos. As these graduates begin their careers, they face numerous ethical issues and dilemmas and can be held personally and legally responsible for their choices. However, many of these same, soon-to-be workforce entrants may have been given little in the way of guidance as to how the ethical decision-making process should work (Goree, 1992). The statement by Goree is especially troubling given the consequences of making marketing decisions outside the bounds of socially acceptable practice. The notion that soon-to-be workforce entrants be provided with ethics instruction is supported by Nappi (1990) who stated that "Before leaving high school, students should have acquired not only knowledge and skills to enhance their capacity to perceive and think clearly about moral issues, but also the ability to put ethical beliefs into practice." (p. 177) Nappi further stated that ". . . educators today have a golden opportunity to play a leadership role in ethics studies. Teachers can help their students to be better prepared to make ethical decisions in their daily lives and later, in their business careers, by exposing them to 'real life' situations that raise ethical questions." (p. 178)

Because of the ethical dilemmas that will be faced by nearly all workers, many professional association and accrediting agency leaders have called for the inclusion of ethics in the marketing curriculum (Oddo, 1997). Specific to the studying of marketing, Gaidis and Andrews (1990) noted:

> Enhancing the ethical development of marketing students is vitally important to the marketing profession. As marketing educators, we have a responsibility to do all that we can to prepare our students to resolve the ethical dilemmas they will inevitably face during their careers. Well-designed ethical learning experiences can enhance students' sensitivities to the ethical dimensions of business decisions and provide analytical frameworks helpful for resolving ethical dilemmas. (p. 3)

In addition, Oddo (1997) supported the inclusions of ethics in the curriculum by noting ". . . that business faculty can and should teach business ethics by raising ethical issues in business courses, and asking students to apply their personal values to resolve ethical dilemmas. This, in turn, will provide future business leaders with a process which incorporates ethical considerations in business decisions." (p. 293) In addition, as explained by Beltramini, Peterson, and Kozmetsky (1984) "Researchers have reported a need for educators to reinforce childhood moral and ethical values, and clarify them for individuals participating in the current business environment. Simultaneously, business managers need to selectively evaluate competing value systems to develop an ethical framework guiding their decision making." (p. 195)

A great deal of the support generated for the inclusion of ethics instruction in the marketing curriculum is its perceived effectiveness for establishing a framework from which decisions can be made and supported within ethical bounds (Jones, 1988; Purcell, 1977; Rest & Thoma, 1986). A review of the literature related to the effectiveness of ethics instruction at the college level by Rest and Thoma (1986) revealed that when course work was at least four weeks in length, instruction was deemed effective in facilitating ethical change among the learners. In addition, students who have participated in ethics instruction have reported its benefits. As noted by Purcell (1977), "Most of them report that they have been helped toward ethical behavior in business by their study of managerial ethics during their student days . . . ." (p. 58)

Given the focus on ethical decision making in marketing at the college level and the effectiveness of ethics instruction in changing students' thought processes, it is amazing that little attention has been focused on ethics instruction among marketing students at the high school level. Not surprisingly, the need to examine the effectiveness of ethics instruction and the need to determine the impact of ethics instruction on students' attitudes, beliefs, and behaviors has been put forward (e.g., Collins, 1992; Collins & Berns, 1993; Shannon & Berl, 1997). For example, Shannon and Berl (1997) reported "the need for additional studies to determine the impact that courses and/or discussions of ethics have on students' attitudes, beliefs, and behaviors." (p. 1074) Collins (1992) reported that there is a lack of research regarding ethics and the effectiveness of ethics instruction in marketing courses at the high school level. This lack of research regarding ethics instruction is troubling given that "The ability to make ethical decisions relative to work is one of the most important tools that vocational education teachers can give to students." (Miller & Coady, 1989, p. 32).

In a related study, Fox and James (1995) investigated the inclusion of ethics instruction in high school business education classes in Illinois and Wisconsin. In addition, they sought to determine if teachers observed any change in student attitude and behavior after ethics instruction. Among the conclusions put forward by Fox and James (1995) was that ethics instruction was being included in the business education curriculum with 77.6% of the respondents to their survey reporting the inclusion of ethics in their teaching. Further, they noted the most effective methods of integrating ethics into business education classes as group discussion, case study, guest speaker, and role play. In response to the question regarding ethics instruction and its ability to change behavior, Fox and James (1995) reported that 52.9% of the respondents indicated that they had observed changes in student attitude and 53.6% had witnessed changes in student behavior after ethics instruction. In another study, Arnold, Schmidt, and Wells (1996) explored the topic of ethics instruction in business education classrooms. They found that 62.5% of the respondents perceived themselves to be highly or adequately prepared to provide ethics instruction.

This study is significant in that it provides status data regarding ethics instruction as well the perceived level of effectiveness of various instructional techniques used in high school marketing programs. As a frame of reference for the teachers in this study, ethics was defined as a standard of conduct and moral judgment. After an extensive review of the literature, no similar study of high school marketing programs could be found.

Purpose

The purpose of this descriptive study was to determine the status of ethics instruction in high school marketing programs in the state of Missouri. Specifically, answers to the following questions were sought:

1. In what high school marketing courses are ethics most frequently integrated?

2. With what frequency are students provided ethics instruction in high school marketing courses?

3. How effective do high school marketing teachers perceive 18 commonly used methods of instruction for teaching ethics?

4. How effective do high school marketing teachers perceive ethics instruction in changing student attitudes and behaviors?

5. What changes in student attitudes do high school marketing teachers perceive occurred as a result of ethics instruction?

6. What changes in student behaviors do high school marketing teachers perceive occurred as a result of ethics instruction?

7. How prepared do high school marketing teachers perceive themselves to teach ethics?

Method

This section describes the procedures used during the study. Discussed are the participants, instrument, and data analysis.

Participants

Study participants consisted of all marketing teachers attending one of four regional inservice meetings held throughout the state of Missouri during the fall of 1998. Data were gathered through the use of an ethics integration status survey distributed and collected by the researcher. Identifiers were not included on the instrument so all responses were completely anonymous. The 141 surveys distributed during these inservice meetings provided data for analysis. While not a probability sample, these 141 respondents represented 70.1% of the 201 marketing teachers in Missouri during the 1998-1999 school year.

Instrumentation

The status of ethics instruction in marketing programs was assessed through an instrument originally developed and used in a study of ethics integration by Fox and James (1995). Arnold et al. (1996) used a modified version of the Fox and James (1995) instrument in their study of ethics in business education classrooms. The instrument was modified to apply specifically to Missouri marketing programs. The instrument was designed to parallel the seven research questions. The first question strove to identify the courses high school marketing teachers teach, or had taught, and into which courses they integrate ethics. Teacher choices were limited to those courses listed in the Marketing Education Administrative Handbook as approved high school marketing courses in Missouri. The second question asked teachers to describe the frequency with which they provided ethics instruction in their classes. Respondent options were (1) every one or two lessons, (2) every unit, (3) every quarter, and (4) every semester. The third question sought to determine the perceived level of effectiveness of 18 teaching methodologies commonly used in high school marketing classrooms. Response options available to participants on a five-point, Likert-type scale ranged from (1) very effective to (5) ineffective for each teaching method. The fourth question investigated the perceived changes in student attitudes and behaviors. Respondent options ranged on a five-point, Likert-type scale from (1) great effect to (5) no effect for each teaching method. The fifth question strove to determine marketing teachers' perceptions of what changes in student attitudes occurred as a result of ethics instruction. Teachers were asked to select from a predetermined list of attitude change choices that they perceived occurred as a result of ethics instruction. The sixth question examined marketing teachers's perceptions of what changes in student behavior occurred as a result of ethics instruction. Teachers were asked to select from a predetermined list of behavior change choices that they perceived occurred as a result of ethics instruction. The last question attempted to determine the perceived level of preparedness of marketing teachers to include ethics instruction in their classes. Response options to the last question ranged on (1) highly prepared, (2) adequately prepared, (3) slightly prepared, and (4) not prepared on a Likert-type scale.

Data Analysis

Since the purpose of this study was to determine the status of ethics instruction in Missouri's high school marketing programs, descriptive statistics were used to answer each of the research questions. More specifically, frequencies, percentages, and rankings were used to answer the questions.

Findings

This section provides answers to the seven research questions examining the status of ethics instruction in high school marketing programs.

Ethics Instruction Integration

Research question one sought to determine in which high school marketing courses ethics instruction was most frequently integrated. Marketing teachers were asked to indicate the different courses that they were teaching or had taught and those courses in which they do or have included ethics instruction. Table 1, the marketing course in which ethics instruction was most frequently integrated is Fundamentals of Marketing. Of the 125 teachers indicating that they taught Fundamentals of Marketing, 113 (90.4%) reported that they included ethics in their instruction of that course. By contrast, the course in which ethics instruction was least frequently integrated is Free Enterprise Economics. Of the 19 teachers who indicated that they taught Free Enterprise Economics, nine (47.4%) stated that they included ethics in their instruction. It should be noted that only four (2.8%) of the 141 teachers in this study reported that they did not include ethics in their instruction.

Table 1
Frequency of Marketing Courses Taught and those that Include Ethics Instruction

Marketing Course	Number Who Have Taught the Course	Number/Percent Who Teach Ethics
Fundamentals of Marketing	125	113 (90.4)
Management	51	45 (88.2)
Advanced Marketing	88	77 (87.5)
Salesmanship	38	29 (76.3)
Business Administration	8	6 (75.0)
Entrepreneurship	73	54 (74.0)
Advertising	35	25 (71.4)
Business Ownership	20	12 (60.0)
Retailing	23	11 (47.8)
Free Enterprise Economics	19	9 (47.4)

Ethics Instruction Frequency

The second research question sought to determine with what frequency high school marketing students received ethics instruction. The time frame of one activity every quarter was reported by 61 (44.5%) of the marketing teachers for integrating ethics into instruction (Table 2). By contrast, the time frame least reported by marketing teachers for integrating ethics into instruction was one activity every lesson, nine (6.6%) of the teachers reported that frequency.

Table 2
Frequency of Ethics Instruction Integration

Time Frame	Number	Percent
One activity every quarter	61	44.5
One activity every two or three lessons	42	30.7
One activity every semester	25	18.2
One activity every lesson	9	6.6

Effectiveness of Teaching Methods

Research question three sought to determine the perceived effectiveness of 18 commonly used methods of instruction. The marketing teachers were asked to rate only the instructional methods that they had used to integrate ethics into their instruction. The four most effective methods of instruction as perceived by high school marketing teachers were lecture/discussion, case study, role-play, and small group discussion (Table 3). Coincidentally, these four teaching methods were also the most frequently used for integrating ethics into instruction. By contrast, the four least effective methods of instruction as perceived by high school marketing teachers were skit, field interview, oral report, and reading assignment only.

Effectiveness of Changing Attitudes and Behaviors of Students

The perceived effectiveness for changing student attitudes and behaviors as a result of ethics instruction as addressed by research question four. Over two-thirds (71.7%) of the marketing teachers rated ethics instruction as having either a good effect or moderate effect on changing student attitudes (Table 4). Also, more than two thirds (67.3%) of the teachers rated ethics instruction as having either a good effect or moderate effect on changing student behavior.

Table 3
Perceived Effectiveness of Instructional Methods for Teaching Ethics

	Level of Effectiveness					
Instructional Method	Very Effective 1	2	3	4	Ineffective 5	Total No./%
Lecture/Discussion	40 (28.4)	44 (31.2)	34 (24.1)	9 (6.4)	4 (2.8)	131 (92.9)
Case Study	46 (32.6)	53 (37.6)	13 (9.2)	2 (1.4)	1 (0.7)	115 (81.6)
Role-Play	45 (31.9)	48 (34.0)	18 (12.8)	2 (1.4)	1 (0.7)	114 (80.9)
Small Group Discussion	48 (34.0)	46 (32.6)	14 (9.9)	2 (1.4)	0 (0.0)	110 (78.0)
Guest Speaker	35 (24.8)	29 (20.6)	23 (16.3)	4 (2.8)	4 (2.8)	95 (67.4)
Video Presentation	27 (19.1)	33 (23.4)	20 (14.2)	7 (5.0)	2 (1.4)	89 (63.1)
Oral Report	7 (5.0)	25 (17.7)	27 (19.1)	16 (11.3)	9 (6.4)	84 (59.6)
Brainstorming	25 (17.7)	31 (22.0)	19 (13.5)	2 (1.4)	1 (0.7)	78 (55.3)
Demonstration	37 (26.2)	26 (18.4)	12 (8.5)	2 (1.4)	0 (0.0)	77 (54.6)
Reading Assignment/Questions	17 (12.1)	17 (12.1)	27 (19.1)	13 (9.2)	1 (0.7)	75 (53.2)
Simulation Game	36 (25.5)	18 (12.8)	14 (9.9)	3 (2.1)	2 (1.4)	73 (51.8)
Debate	25 (17.7)	26 (18.4)	12 (8.5)	2 (1.4)	2 (1.4)	67 (47.5)
Panel Discussion	14 (9.9)	20 (14.2)	23 (16.3)	7 (5.0)	3 (2.1)	67 (47.5)
Field Trip	21 (14.9)	22 (15.6)	10 (7.1)	8 (5.7)	3 (2.1)	64 (45.4)
Reading Assignment Only	5 (3.5)	7 (5.0)	14 (9.9)	20 (14.2)	17 (12.1)	63 (44.7)
Research Project/Term Paper	15 (10.6)	17 (12.1)	17 (12.1)	6 (4.3)	2 (1.4)	57 (40.4)
Skit	14 (9.9)	12 (8.5)	15 (10.6)	5 (3.5)	5 (3.5)	51 (36.2)
Field Interview	8 (5.7)	15 (10.6)	16 (11.3)	7 (5.0)	3 (2.1)	49 (34.8)

Table 4
Perceived Effectiveness of Changing Attitude and Behavior through Ethics Instruction

Type of Perceived Change	Number	Percent
Attitude		
Great Effect	6	4.4
Good Effect	39	28.5
Moderate Effect	62	45.3
Little Effect	25	18.2
No Effect	5	3.6
Total	137	100.0
Behavior		
Great Effect	9	6.6
Good Effect	27	19.9
Moderate Effect	68	49.9
Little Effect	23	16.9
No Effect	9	6.6
Total	136	100.0

Student Attitudes Changes that Result from Ethics Instruction

Research question five sought to determine the perceived effectiveness of ethics instruction to change student attitudes. Marketing teachers were provided with a list of ten attitudes (Table 5) from which to select all the attitudinal behaviors that they perceived occurred as a result of ethics instruction. The most noted student attitude change, greater tolerance of different views, was reported by 38 (27.7%) of the marketing teachers. By contrast, the student attitude change least selected was more respect for the law reported by six (4.4%) of the marketing teachers.

Table 5
Perceived Changes in Student Attitudes Resulting from Ethics Instruction

Change in Attitude	Number	Percent*
Greater tolerance of different views	38	27.7
More positive attitude in general	37	27.0
Accept responsibility for wrongdoing	34	24.8
More respect for others	33	24.1
Aware of need for workplace confidentiality	29	21.2
More aware that cheating is wrong	27	19.7
Aware of profit motive	27	19.7
Either more or less judgmental	16	11.7
Greater awareness of computer fraud	9	6.6
More respect for the law	6	4.4

*Percent of the 137 teacher who included ethics in their instruction

Student Behavior Changes that Result from Ethics Instruction

The perceived effectiveness of ethics instruction in changing student behavior was examined through research question six. Marketing teachers were provided with a list of eight behaviors from which to select all the behavior changes they perceived occurred in their students (Table 6). The most noted student behavior change, better work ethic, was reported by 44 (32.1%) of the marketing teachers. The least reported student behavior changes were less copying of peer work and showing greater respect for the law, both of which were reported by five (3.6%) marketing teachers.

Table 6
Perceived Changes in Student Behaviors Resulting from Ethics Instruction

Change in Behavior	Number	Percent*
Better work ethic	44	32.1
Improved classroom conduct	41	29.9
More punctual	23	16.8
Monitor self and peer behavior	21	15.3
Better workplace confidentiality	16	11.7
Avoid hasty decisions	16	11.7
Less copying of peer work	5	3.6
Show greater respect for the law	5	3.6

*Percent of the 137 teacher who included ethics in their instruction

Adequacy of Preparation for Teaching Ethics

Research question seven sought to determine how well marketing teachers perceived themselves to be prepared to teach ethics. Table 7 indicates that 94 (74.6%) of the marketing teachers perceived themselves to be adequately prepared to teach ethics. Only two (1.4%) of the marketing teachers perceived themselves to be not prepared to teach ethics.

Table 7
Perceived Adequacy of Marketing Teachers Preparation to Teach Ethics

Preparation	Number	Percent
Adequately prepared	72	57.1
Slightly prepared	30	23.8
Highly prepared	22	17.5
Not prepared	2	1.6
Total	126	100.0

Conclusions and Discussion

As is the case with most studies, caution should be used when interpreting the results of the current study. For example, it should be noted that the teachers participating in the study were not a probability sample and thus may not necessarily be representative of all high school marketing teachers. On a positive note, the 141 participants in this study did represent 70.1% of Missouri's 201 marketing teachers during the 1998-1999 academic year. A single program (marketing) and state (Missouri) specific could be viewed as an improvement on the Fox and James (1995) and Arnold et al. (1996) studies of ethics integration; the participants in these studies were from multiple states and/or multiple program areas. Further, the data for this study were collected anonymously by the researcher. This anonymity during the data collection process may have resulted in more honest participant responses since some questions were of a sensitive nature. Both the high rate of participation and the anonymity of the responses enhance the credibility of this study's findings. While the findings of this study relative to the integration of ethics in high school marketing programs lend support to numerous conclusions, the following seem to be the most tenable.

First, ethics instruction is being provided to high school students in Missouri marketing programs. Of the 141 marketing teachers participating in the study, 137 (97.2%) reported providing some form of ethics instruction in their courses. Clearly, the most ethics instruction occurs in the Fundamentals of Marketing course with 113 (90.4%) of the 125 teachers indicating that they included ethics in their teaching of this course. This high percentage is significant given that in most Missouri high school marketing programs, Fundamentals of Marketing is a prerequisite for higher level marketing courses. In addition, 112 (81.8%) of the 137 marketing education teachers included ethics instruction in their courses at least once every quarter.

Second, the perceived effectiveness of the numerous methods for teaching ethics and the frequency of their use varies considerably among marketing teachers. The most effective method of ethics instruction was small group discussion with 48 (43.6%) of the 110 teachers reporting the use of that technique providing a rating of very effective. By contrast, the least effective method of ethics instruction was reading assignment only with five (4.5%) of the 63 teachers reporting the use of that technique providing a rating of very effective. In fact, 17 (26.9%) of the 63 teachers who had employed the reading assignment only method rated it as ineffective.

Third, high school marketing teachers perceive that ethics instruction is effective in changing student attitudes and behaviors. Over two-thirds (73.8%) of the teachers rated ethics instruction as having either a good effect or moderate effect on changing student attitudes. In addition, more than two-thirds (69.3%) of the teachers rated ethics instruction as having either a good effect or moderate effect on changing student behavior. The most noted student attitude change, due to ethics instruction, was greater tolerance of different views. Thirty-eight (27.7%) marketing teachers indicated a change in the attitude, tolerance of different views, among their students. However, the most noted student behavior change was a better work ethic. Forty-four (32.1%) marketing teachers noted a better work ethic behavior change among their students.

Lastly, high school marketing teachers generally perceive themselves to be prepared to include ethics in their instruction. Of the 126 teachers who responded to the question, 94 (74.6%) perceived themselves as either adequately prepare or highly prepared to integrate ethics into their marketing courses. Of the remaining 32 teachers, only two (1.4%) indicated that they were not prepared to teach ethics.

The current study is consistent with the Fox and James (1995) study in that ethics are being included in marketing classes. In this study 97.2% of the teachers reported including ethics in their marketing instruction. One reason the inclusion of ethics is so high among high school marketing teachers may be their constant contact with the business community through the cooperative education component of their programs. In addition, the two studies are congruent in that the teachers involved perceived positive changes in student attitude and behavior as a result of ethics instruction. The present study is congruent with the Arnold et al. (1996) investigation in which two-thirds (66.6%) of the marketing teachers perceived themselves to be highly or adequately prepared to instruct ethics.

Implications

Given the above findings and discussion, the following implications for practice are offered. The finding that ethics instruction is being provided to students in Missouri's high school marketing programs has very positive consequences for the students who receive the instruction and the employers for whom they will eventually work. As noted in the literature, the personal and organizational consequences of marketing practices that operate outside socially acceptable boundaries can be swift and severe. Being fired or demoted are among the personal consequences of perceived or real unethical marketing practices, while lawsuits and poor public image are among the consequences that could occur as a result of real or perceived unethical marketing practices at the business level.

While the positive consequences of the ethics instruction that is going on in Missouri's high schools are many, it may be necessary that current and future marketing teachers be provided with supplemental support from state department of education personnel and marketing teacher educators. For example, while 74.6% of the teachers in the current study perceived themselves as being highly or adequately prepared to teach ethics, 24.5% perceived themselves as being slightly prepared or not prepared to teach ethics. Perhaps a unit on teaching ethics conducted as part of a preservice methods course would be useful in helping future marketing teachers prepare for ethics instruction. Further, developing in students a model for decision making has been noted as a critical element of ethics instruction. Including a section on ethical decision making frameworks as part of a teacher inservice activity may enhance the inclusion of ethics instruction among practicing educators. Yet another option for supporting marketing teachers in the integration of ethics is the development of a curriculum framework. A sampling of ethics activities that align with state approved curriculum would encourage and support teachers in their efforts to integrate ethics with marketing content. Regardless of the support mechanism selected, state department of education personnel and marketing teacher educators need to support the inclusion of ethics instruction in high school marketing programs.

Recommendations

Based on the review of related literature and the analysis of data, the following recommendations for further research are offered:

1. A study assessing the perceived effectiveness of ethics instruction on changing student attitudes and behaviors should be conducted with high school marketing students. An investigation of this nature would shed light as to whether or not the inclusion of ethics instruction is effective in changing attitudes and behaviors from the point of view of students.
2. A study assessing the status of ethics instruction across the entire school curriculum should be conducted. A study of this nature would shed light as on which other subject areas teachers are including ethics in their instruction. Findings of such a study could result in collaborative efforts for infusing ethics across the entire high school curriculum.

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Structure of Program of Study Where Plateaus Were Encountered in Court Reporting Skillbuilding Classes

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Abstract

National Court Reporters Association (NCRA) Certified Reporting Instructors' (CRIs') perceptions of speed plateaus were analyzed along with the structure of the respondents' court reporting programs. Statistically significant relationships were found among plateau perceptions and whether respondent taught theory; the type of school; size of student enrollment; particular theory taught; instructor's presence for all theory activities; type of dictation material; accuracy required in theory; particular speed required at end of theory; length of speed tests; size of speed increment; open enrollment; and NCRA approval of program.

Existence of Plateaus

A widespread phenomenon in psychomotor skill development called plateaus or plateauing often occurs as learners strive to attain the skills necessary to perform in a highly skilled way. In the physical education area, Magill (1993) identified seven performance-related changes on a continuum from novice to the highly skilled performer. Those included (a) changes in the individual's knowledge structure of the skill; (b) changes in detecting and correcting errors; (c) changes in how the goal of skill is achieved; (d) changes in coordination; (e) changes in movement efficiency; (f) changes in muscles used to perform the skill; and (g) changes in visual attention.

Performance curves are often used in depicting the existence of a plateau. Travers (1982) discussed the first use of the term "learning curve" by Bryan and Harter in 1897 to illustrate the rate at which learning occurred, with the slowed-up portion of the learning curve being called a plateau. West (1983) discussed performance curves in keyboarding and described plateaus as the periods of little or no apparent progress. Causes for these plateaus, a motivational phenomenon according to West (1983), were identified as follows: (a) declining motivation; (b) continued use of a no-longer appropriate work method; (c) sudden rather than gradual increase in task difficulty; (d) persistent weaknesses the student cannot eliminate.

Travers (1982), however, said it was hard to find convincing evidence that plateaus existed except as artifacts. Keller (1958) labeled the phenomenon the "phantom plateau."

If plateaus occur in court reporting programs of study, they occur when students successfully complete the requirements to write shorthand from dictation and accurately transcribe that dictation into English at one speed but then cannot progress beyond the attained speed. Many students will plateau at one or more speeds before completing the court reporting major (Carruthers, Porter, & Vaughn, 1990).

Nature of the Study

Prospective students are attracted to the court reporting major because of the prestige of the position and because of the earnings potential. The demanding nature of the course of study, however, often combines with other factors to result in a high dropout rate from court reporting programs. High dropout rates of court reporting students cited by Morse (1989) and Kocar (1991) are of great concern to court reporting educators. In fact, a May 1997 cumulative chart prepared by Gaede (1997) of the National Court Reporters Association (NCRA) using 1996 annual report figures indicated that 9803 students were enrolled in 106 NCRA-approved programs. Of that number only 9.2% graduated in 1996.

Concern over the high dropout rate in court reporting education led NCRA to commission Kocar (1991) to research the issue of dropout rates. On the question of why students dropped out of court reporting, Kocar (1991) reported a mean of 3.27 on a five-point scale (with 1 being Strongly Agree and 5 being Strongly Disagree) indicating students did not drop court reporting because of discouragement caused by speed plateaus.

Purpose of the Study

The purpose of this study was to determine the perceptions of Certified Reporting Instructors (CRIs) regarding the nature of plateaus often encountered in learning court reporting skills and to what extent any plateaus are associated with program structure and student completion. Demographic data of the CRIs and the structure of the court reporting course of study at their schools were analyzed for any existing relationships. It is hoped that information collected through this study is valuable to pro-

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gram directors as they strive to recruit students. A realistic picture of what is required to complete the program can be offered to the prospective student. Court reporting instructors will be able to use the information gathered in this study to structure courses to the students' best advantage.

Statement of the Problem

The problem of this study was to determine the perceptions of Certified Reporting Instructors (CRIs) regarding the nature of plateaus often encountered in learning court reporting skills and to what extent any plateaus are associated with program structure and student completion. Four specific research questions designed to address this problem are reported in this article.

Research Question 1. Do court reporting students sometimes experience speed plateaus?

Research Question 2. Are there specific speed levels and/or types of dictation material on which plateaus occur during the enrollment of court reporting students?

Research Question 3. What is the typical duration of any speed plateau?

Research Question 4. Is there a relationship between Certified Reporting Instructors' (CRIs') speed plateau perceptions (RQs 1-3) and the following program structural elements:

A. Whether CRI is presently teaching machine shorthand theory?
B. Whether CRI is currently teaching machine shorthand speedbuilding class?
C. The type of school where CRI is teaching?
D. The number enrolled in the court reporting major at CRIs' schools?
E. The particular machine shorthand theory taught at CRIs' schools?
F. The amount of time students spend in learning machine shorthand theory?
G. The percentage of accuracy required at each speed level?
H. The point at which speed tests are introduced?
I. The type of dictation material used for testing?
J. The length of speed tests, if given, in theory classes?
K. The size of speed increments used in organizing classes?
L. Open enrollment as opposed to set dates when matriculation may occur?
M. Whether respondents' court reporting program is approved by NCRA?

Research Methods

Certified Reporting Instructors as of October 1, 1997, on the National Court Reporters Association registry were the target population. A definitive population of all CRIs was selected, which total was 301, from which the researcher was excluded, dropping the population to 300.

Before a survey instrument could be designed, a definition of a plateau as it applies to court reporting students was necessary, since a search of the literature did not reveal such a definition. Therefore, a delphi procedure was used to arrive at a definition.

A questionnaire was then designed by the researcher to collect CRIs' perceptions regarding the nature of speed plateaus. CRIs were asked to respond to the items on the survey using the definition of a speed plateau developed above. In addition, the organization of court reporting educational programs was examined to determine if there were any relationships to the nature of speed plateaus as perceived by the CRIs responding.

Content validity was determined by a panel of three experts, whose suggestions were included in the revised questionnaire. The instrument containing those revisions was pilot tested with CRI candidates on October 25, 1997.

Evaluation of the questionnaire by the pilot group formed the basis for the final version of the instrument which was mailed to all CRIs on November 14, 1997. A follow-up mailing was sent on January 5, 1998. A total of 189 responses (63%) was received by February 23, 1998, of which 176 (58.7%) were usable. Frequencies, percentages, Pearson correlations, and Pearson chi-square tests were run on the data as appropriate to the information sought. The results of the statistical analyses are reported below.

Research Results

Nature of CRIs' Perceptions of Speed Plateaus

Existence of plateaus. CRIs responding overwhelmingly believed (96.4%) that court reporting students encounter speed plateaus. 94.4% also indicated that court reporting students experiencing one speed plateau were likely to encounter another speed plateau before completion of the program of study.

When asked what percentage of student enrollment in the CRIs' court reporting programs experienced a speed plateau, respondents indicated their belief that the phenomenon was common as shown in Table 1. The standard deviation indicated there was much variability about the mean, but it still showed that respondents felt that well more than one-half of court reporting students experienced speed plateaus.

Table 1
Percent of Students Experiencing a Speed Plateau

Mean	Median	Mode	SD
71.12%	80.0%	90	24.76

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Speed levels of plateaus. Only respondents with experience with students in machine shorthand who were on a plateau answered survey items about speed plateau levels. That number was 159 or 96.4% of all usable surveys.

Respondents were asked to rank the speeds at which they thought plateaus were likely to occur. The range was from most frequent (a ranking of 1) to least frequent (a ranking of 8) to show the speed at which students were working when the first plateau occurred. The lower the mean, the greater the likelihood a plateau would occur at that speed if a student were to experience a plateau.

CRIs chose the speed category of 160-180 wpm as the speed where the first plateau was most likely to occur as indicated by a mean of 2.49. However, means for 140-160 wpm (*M* = 2.57) and 180-200 wpm (*M* = 2.63) followed closely.

As would be expected, the speed CRIs ranked for a second plateau was higher than that for the first speed plateau. The lowest ranking indicating the greatest likelihood for a plateau (M = 2.11) was for the 180-200 wpm speed category (SD = 1.30). The next lower mean was for the 160-180 wpm category (*M* = 2.46; SD = 1.29)

Type of dictation material. Respondents selected the type of dictation material on which the speed plateaus occurred from the following choices: literary, jury charge, two-voice, other. The Other type of dictation material may be such types as business letters or four-voice testimony. CRIs could check more than one category. At both the first speed plateau and the second speed plateau, two-voice was selected most often (57.7%, first plateau; 45.1%, second plateau).

Typical duration of plateau. Because the definition of a speed plateau experienced by a court reporting student included a duration of 13-19 weeks without passing a single speed take, possible responses for speed plateau duration started at 20-26 weeks. The highest percentage (77 or 44%) responding to this item indicated the duration of a typical first speed plateau was 20-26 weeks. The next most frequent response was 26-52 weeks (48 or 27.4%). In response to the same question regarding a second speed plateau, the largest response was "Don't Know" (38; 24.4%); however, 33 (21.2%) said 13-19 weeks, the same amount of time as defined for a first speed plateau.

The existence of speed plateaus, the speed levels at which they occur, the type of dictation material on which they occur, and the duration of a typical plateau all formed CRIs' perceptions regarding the nature of speed plateaus. These perceptions were then analyzed against the structure of the respondents' program of study to answer Research Question 4.

Structure of Court Reporting Program

The next series of data pertains to any statistically significant relationship between CRIs' speed plateau perceptions and the variable indicated by the paragraph heading.

Current assignment Ttaching theory. Those CRIs who currently taught machine shorthand theory selected 160-180 wpm as a category for a first plateau at a $p < .001$. Two statistically significant Pearson correlations (at $p < .05$) were the 180-200 wpm and 200-220 wpm (2nd).

Current assignment teaching speedbuilding. No statistically significant relationship was identified between respondents' perceptions regarding the nature of speed plateaus and whether they are currently teaching machine shorthand speedbuilding.

Type of school. CRIs were asked to indicate their institution from five types of educational institutions: community college, proprietary/career, private junior college, four-year college/university, and vocational-technical school. More respondents selected proprietary/career (63, 38.2%) than community college (53, 32.1%).

The only statistically significant Pearson chi-square tests of the entire variable are reported in Table 2. The first variable, 120-140 wpm (1st) corresponds to the CRIs' perception of this speed as a category where a first plateau might occur. Other Dictation (1st) indicates the CRIs' perception of the type of dictation material on which the first plateau might occur (choices provided were literary, jury charge, two-voice testimony, and other). If the CRIs were unable to indicate the type of dictation material on which a second speed plateau occurred, their responses were reported as Don't Know Dictation (2nd).

The 120-140 wpm (1st) perception was ranked as the most frequent speed at which a plateau might occur by a total of 21% of CRIs teaching at a community college. A little more than one-third of vocational-technical school respondents (34.8%) selected Other dictation material as the most likely type of dictation material on which a first speed plateau might occur. The reader is asked to note in Table 3 that for Two-Voice dictation material the statistical significance is driven both by the count indicating that a first plateau was likely to occur (5) and by the 19 respondents from vocational-technical institutions who felt that plateaus were not likely to occur on two-voice dictation material.

Statistically significant cells in the Pearson chi-square test of independence between speed plateau perceptions (speed and type of dictation material, duration of plateau) and the type of educational institution where the respondents were teaching are reported. Omitted from Table 3 were statistically significant cells where cell counts fell below five, which would cause results to be viewed as tentative. Re- sults are arranged according to institution types offered as choices on the survey instrument.

Table 2
Statistically Significant Pearson Chi-Square Tests Between Type of School and Speed Plateau Perceptions

Variable	Degrees of Freedom	Chi-Square	Significance
120 - 140 wpm (1st)	24	36.776	.046
Other Dictation (1st)	4	10.828	.029
Two-Voice Dictation (1st)	4	18.271	.001
Don't Know Dictation (2nd)	4	10.371	.035

Number of students enrolled. When Pearson correlations were run on CRIs' perceptions of the nature of speed plateaus and the enrollment at the schools where they teach, only five statistically significant relationships were found (Table 4). On both the first and second speed plateau, Other Dictation had a statistically significant relationship with the size of student enrollment at the p<.00 level indicating that there was no chance in 100 responses of Other Dictation appearing randomly. The negative correlations shown indicate an inverse relationship between perceptions and enrollment. Thus for a negative correlation, the greater the enrollment, the less likely the respondent was to report the particular variable as an element of his/her perception of a speed plateau.

Specific theory taught. The theories approved by the National Court Reporters Association as being ones that allow users to write realtime were listed for the respondents on the survey. In alphabetic order, those theories were Digitext; Phoenix; REALWRITE; Roberts, Walsh, Gonzalez; StenEd; Stenograph; StarTran and an Other blank for the CRIs to respond if the theory taught in their school was not provided as one of the choices. The frequency of their responses is shown in Table 5.

These frequencies were then analyzed for any existing dependence between the speed plateau perceptions and the theory taught. The only chi-square dependence emerging was between theory taught and Other Dictation material on both first and second plateaus, which excluded literary, jury charge, and two-voice testimony.

Sixteen different cells in the chi-square test were found to be statistically significant, indicating a relationship between the machine shorthand theory taught and the respondents' perceptions of the type of dictation material and the speed at which plateaus were likely to occur. Where cell counts were 5 or higher, Table 6 lists each statistically significant variable as well as its ranking if the variable is a speed plateau category. The most frequent speed at which a plateau might be encountered was ranked as 1 with the least frequent being 8. Also included in the table is the theory taught by the respondents' programs.

Table 3
Cells of CRIs' Perceptions of Speed Plateaus and Type of Educational Institution

Variable	Type	Count	% of Total	Standard Residual
120 - 140 wpm (1st)	Com. College	11	11.6%	3.3
Don't Know (2nd)	Four-Year	5	3.0%	2.1
Other Dictation (1st)	Vo-Tech.	8	4.8%	2.4
Not Two-Voice (1st)	Vo-Tech.	19	11.4%	2.9
Two-Voice (1st)	Vo-Tech.	5	3.%	-2.4

Table 4
Statistically Significant Pearson Correlations Between CRIs' Speed Plateau Perceptions and Student Enrollment

Variable	Correlation	Significance
Less Than 100 wpm (1st)	-.318	.015
Other Dictation (1st)	.315	.000
160 - 180 wpm (2nd)	-.302	.010
More Than 220 wpm (2nd)	.316	.031
Other Dictation (2nd)	.397	.000

Table 5
Machine Shorthand Theory Taught in Respondents' Programs (n=153)

Theory Taught	Frequency	Percent
StenEd	81	52.9%
Stenograph	31	20.3%
Roberts, Walsh, Gonzalez	17	11.1%
Digitext	12	7.8%
Phoenix	10	6.5%
REALWRITE	2	1.3%
Total	153	99.9%

Note. Due to rounding error, the total percentage is 99.9%.

When reviewing Table 6, the reader sees, for example, that five respondents teaching Roberts, Walsh, Gonzalez theory rated the speed category of 100-120 wpm as the sixth most frequent speed at which a first plateau might occur. On a scale of frequency from 1-8, the respondents teaching this particular theory felt this was basically an unlikely speed for a plateau to occur, thus establishing the dependence between theory taught and the likelihood (or unlikelihood) that a plateau would occur at this speed. Table 6 also shows that of all CRIs ranking the 100-120 wpm speed plateau anywhere from 1-8, 6.5% of them taught Roberts, Walsh, Gonzalez theory.

Time spent learning theory. CRIs were asked to indicate the number of hours per week spent in learning machine shorthand theory and whether those hours were all with an instructor leading the activities. The only statistically significant Pearson correlation involving speed plateau perceptions and whether an instructor was present for all theory activities was found at the Less Than 100 wpm level on a first speed plateau. That finding indicates that those respondents (n= 63) who felt that a speed plateau was likely to occur at speeds less than 100 wpm taught in programs where theory instructors were present for all theory instructional activities.

Respondents then indicated the total number of weeks spent learning machine shorthand theory. The frequencies ranged from less than four weeks (n=4) to more than 39 weeks (n=4). These frequencies were analyzed for any existing correlation between the total number of weeks spent in learning theory and perceptions of speed plateaus and demographic data.

Two statistically significant Pearson correlations emerged and are shown in Table 7. The Theory with Instructor correlation indicates that the court reporting programs that had instructors present for all theory-learning activities had a weak statistically significant correlation to respondents' choice of < 100 wpm as the speed where a first plateau might occur. When a chi-square test was run on the CRIs' perceptions of the nature of speed plateaus with time spent learning theory, 22 statistically significant cells were found, although only 6 cells had counts above 5 and are reported here. The number of hours spent learning theory as well as the perceptions of speed plateaus are included in the following table. For ease of reading, the numbers of hours spent in learning theory are grouped together with all variables with which they had a statistically significant dependence.

The variables are the respondents' perceptions of the speed at which plateaus were likely to occur and on what type of dictation material plateaus were likely to occur. The designation (1st) indicates a first speed plateau and (2nd) indicates a second speed plateau a student of court reporting might encounter. This is true for both speed level categories and for the types of dictation material.

In contrast to the many individual cells that were statistically significant when analyzed using the Pearson Chi-Square test of independence, only three tables analyzing elements of CRIs' perceptions of the nature of speed plateaus were statistically significant. Those elements are reported in Table 9. The only dependence found between CRIs' perceptions of the nature of speed plateaus and the number of hours spend in machine shorthand theory class(es) dealt with any second speed plateau encountered by a court reporting student on a particular type of dictation material, rather than a speed level such as 160-180 wpm.

Table 6
Statistically Significant Pearson Chi-Square Between CRIs' Speed Plateau Perceptions and Machine Shorthand Theory Taught

Variable	Rank	Theory	Count	%of Total	Standard Residual
100 - 120 wpm (1st)	6	R., W., Gonzalez	5	6.5%	2.1
120 - 140 wpm (1st)	5	R., W., Gonzalez	5	5.2%	2.3
160 - 180 wpm (1st)	1	R., W., Gonzalez	6	5.0%	2.3
180 - 200 wpm (1st)	1	R., W., Gonzalez	5	4.4%	2.6
Other Dictation (1st)		R., W., Gonzalez	6	3.7%	2.6
Other Dictation (1st)		Other Theory	5	3.0%	3.0
Other Dictation (2nd)		StenEd	6	3.7%	-1.9
Other Dictation (2nd)		Other Theory	5	3.0%	2.5

Table 7
Statistically Significant Pearson Correlations Between Time Spent in Theory and Plateau Perceptions

Variable	Perception	Correlation	Significance
Theory w/Instructor	<100 wpm (1st)	.271	.032
No. Theory Weeks	140-160 wpm (1st)	.188	.048

Table 8
Statistically Significant Pearson Chi-Square Cells Showing Dependence Between Hours Spent Learning Theory and Speed Plateau Perceptions

Hours	Variable	Rank	Count	% of Total	Standard Residual
< 5 hours	100 - 120 wpm (1st)	7	5	6.5%	2.5
8 - 10 hours	Literary (2nd)		26	15.7%	2.1
8 - 10 hours	Jury Charge (2nd)		11	6.6%	1.8
10.5 - 12 hours	140 - 160 wpm (1st)	1	9	8.0%	2.5
10.5 - 12 hours	Other Dictation (1st)		6	3.6%	2.4
10.5 - 12 hours	Other Dictation (2nd)		7	4.2%	2.5

Table 9
Statistically Significant Pearson Chi-Square Tests Between Speed Plateau Perceptions and Hours in Machine Shorthand Theory Class

Variable	Degrees of Freedom	Chi-Square	Significance
Literary (2nd)	5	0.730	.001
Jury Charge (2nd)	5	13.191	.022
Other Dictation (2nd)	5	19.331	.002

Required Accuracy Percentage. Two Pearson correlations were found to be statistically significant in terms of a relationship between speed plateau perceptions and minimum accuracy on theory tests, and they occurred on the second speed plateau. Don't Know Dictation material (2nd) emerged as a moderately strong positive correlation (.397; p<.01), and 140-160 wpm (2nd) had a weak negative correlation of -.275 (p<.05).

In addition to requesting the percentage of accuracy required in machine shorthand theory class, CRIs were asked to indicate the minimum level of accuracy required for all their speedbuilding classes. Choices ranged from 95% through 98% minimum accuracy. The most frequent response given was 95% (n=69, 41.3%), while 98% accuracy was selected by 43 CRIs (25.7%), followed by 38 CRIs who selected 97% accuracy (22.8%) leaving 17 CRIs who selected 96% accuracy (10.2%).

The data were then analyzed for any Pearson correlations existing between the speed accuracy requirement and speed plateau perceptions. Only two statistically significant relationships emerged, and they were relatively weak ones involving the type of dictation material on which a speed plateau might occur. Of interest, however, is the fact that there is a weak inverse relationship (-.157; p<.05) between the accuracy required in speedbuilding classes and the likelihood that jury charge dictation material will be involved in a speed plateau. Other Dictation material (2nd) showed a weak positive relationship (.284) with a high degree of probability (p<.000).

Introduction of speed tests. 100-120 wpm (1st) and 160-180 (2nd) were statistically significant with the particular speed requirements by the end of theory class(es).

Type of dictation material. Two-voice dictation material is most likely to be involved in both the first and second speed plateaus, followed by literary material.

Length of speed tests. An inverse relation between length of speed tests and 140-160 wpm (1st) was found statistically significant.

Size of speed increment. Statistically significant chi-square dependence existed between size of speed increments and Literary (1st), 120-140 wpm (2nd), and 200-220 wpm (2nd).

Open enrollment vs. set matriculation. More than three-fourths of the respondents (86.5%) replied that their court reporting program had open enrollment; that is, when the students met the terminal requirements for any particular class, they were permitted to enroll immediately in the next course. Only a few statistically significant correlations were found when the data were analyzed.

Table 10
Statistically Significant Pearson Correlations Between Open Enrollment/Predetermined Enrollment and Speed Plateau Perceptions

Variable	Correlation	Significance
140 - 160 wpm (1st)	.288	.002
> 220 wpm (1st)	-.284	.046
Other Plateau (2nd)	-.161	.039

NCRA program approval. Of the 166 responding to this item, 66.3% of the CRIs were connected with NCRA-approved court reporting programs. Nine correlations were identified in analyzing responses between NCRA approval and CRIs' perceptions of the nature of speed plateaus. Table 11 contains the statistically significant Pearson correlations of those relationships. The reader will note that respondents from NCRA-approved programs were less likely than respondents from non-approved programs to select the More Than 220 wpm speed category for a first plateau.

Table 11
Statistically Significant Pearson Correlations Between NCRA Approval and Speed Plateau Perceptions

Variable	Correlation	Significance
180 - 200 wpm (1st)	.200	.033
> 220 wpm (1st)	-.372	.007
Two-Voice Plateau (1st)	.235	.002
Other Plateau (1st)	-.214	.006
< 100 wpm (2nd)	.352	.024
180 - 200 wpm (2nd)	.207	.040
Literary Plateau (2nd)	.207	.007
Two-Voice Plateau (2nd)	.306	.000

Recommendations

Based upon a study of the literature and the findings of this study, the following recommendations are offered:

1. Let court reporting students on a plateau know that the typical duration of a first speed plateau is 20-26 weeks, so they realize they can work through the plateau given time.

2. Research students' perceptions of speed plateaus to determine whether and where they correlate with those of Certified Reporting Instructors. This would ensure a more accurate picture of speed plateaus.

3. Research to determine if the greater learning load required by realtime machine shorthand theories has influenced the completion rate of court reporting students.

4. Research to determine if certain teaching methods make students more likely to experience speed plateaus.

5. Experimental research to determine whether emphasizing using realtime capability for all speedbuilding done by court reporting students leads to greater hesitations and speed plateaus.

6. Research examining exact records of student performance in both proprietary and public court reporting education programs.

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Student Attitudes Toward and Evaluation of Internet Instruction

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Abstract

The purpose of this study was to determine if differences existed in student attitudes toward and evaluation of Internet-assisted instruction based on learning style and selected student characteristics—gender and student status (i.e., undergraduate or graduate). Analysis of the data failed to reveal significant differences in student attitudes toward or evaluation of Internet-assisted instruction based on learning style or selected student characteristics. A discussion of the positive implications of this study's findings for teaching and learning is also presented.

Introduction

The "use of the Internet is growing exponentially in universities around the world" (Harasim, Hiltz, Teles, & Turoff, 1995, p. 79). Given this exponential growth, there is little doubt that Internet-assisted instruction will become a major method of course delivery during the 21st Century. Reasons for this growth include the Internet's ability to overcome distance, geography, resource, and/or time barriers for both students and instructors (Kerka, 1996; Sugar & Bonk, 1995). By breaking down these barriers, Internet courses hold the promise of increasing student access to higher education (Powers & Mitchell, 1997; Smith, 1996). In addition, the use of Internet tools such as e-mail and listservs are reported by some to enrich discussion, dialogue, and debate among students and instructor (Smith, 1996; Sugar & Bonk, 1995).

While there are proponents of the Internet as an instructional delivery method, there are a number of issues that need to be addressed by educators before its wide spread adoption. For example, Ehrmann (1995) noted that some ineffective face-to-face teaching methods can be made even worse when they become technology based. Other instructors have expressed concern that Internet-assisted instruction may disrupt interaction among students (Smith, 1996). This concern is well founded given that interaction among the students and with the instructor are perhaps the most important factors in fostering learning among college students (Astin, 1993; Smith, 1996). Further, there is a considerable base of literature regarding teaching methods, learning styles, and learning. As noted by Chinien and Boutin (1993), teaching methods that are congruent with students' learning styles improve their attitude toward learning.

Indeed, researchers have an expansive history in examining the connection with learning and specific learning environments (e.g., Gregorc, 1984; Witkin, Oltman, Raskin, & Karp, 1971). A commonly used method of assessing learning styles has been with the field dependent/field independent dimension developed by Witkin et al. (1971). Garton (1993) provided an in-depth discussion of these two learning style dimensions. In his discussion, he noted that field dependent learners value collaboration, prefer extrinsic motivation, value positive instructor feedback, and possess well-developed social skills. By comparison, field independent learners prefer competition, are intrinsically motivated, usually do not respond to instructor reinforcement, and possess poorly developed social skills. Garton (1993) also noted that learners from both dimensions—field dependent and field independent—can do well in a variety of educational settings. It is likely, however, that different learner tasks are better associated with one or the other learning dimensions. Recently, Garton (personal communication) proposed a neutral category in which students possess traits of both field dependent and field independent learners. He postulated that these neutral category students are able to adapt to a wide variety of learning situations.

An extensive review of the literature revealed relatively few studies regarding student attitudes toward and/or the evaluation of Internet-assisted instruction (e.g., Townley, 1997; Verbrugge, 1997; Wells & Anderson, 1997). Townley (1997) conducted a descriptive study of the perceptions of students and instructors toward Internet-assisted instruction in community colleges. Verbrugge (1997) examined the results of a management information systems course offered through the traditional classroom method and one offered entirely via Internet-assisted instruction. The effects of Internet-assisted instruction on the attitudes of students in a graduate telecommunications course was explored by Wells and Anderson (1997). Wen (personal communication) noted that Internet-assisted instruction has evolved to take a variety of forms. For example, in some Internet-assisted courses, the instructor and students never meet face-to-face; by contrast, other Internet-assisted courses require that the Instructor and students meet face-to-face on a regularly scheduled basis for general review of course material and learning assessment activities such as exams. A detailed discussion of Intenet-assisted instruction procedures as they apply to this study is provided in the procedures section. This study is significant in that

Internet-assisted instruction is a relatively new system of delivery and little research has been conducted as to how well it is received by students (Miller, 1997). Further, the results of this study will fill a gap in the literature regarding Internet-assisted instruction and provide guidance for administrators and instructors planning to offer such courses.

Purpose

The purpose of this study was to determine if differences existed in student attitudes toward and evaluation of Internet-assisted instruction based on learning style and selected characteristics, gender and student status (i.e., undergraduate and graduate). Specifically, answers to the following questions were sought:

1. Is there a difference in student attitudes toward Internet-assisted instruction based on student learning style?
2. Is there a difference in student evaluations of Internet-assisted instruction based on student learning style?
3. Is there a difference in student attitudes toward Internet-assisted instruction based on gender and student status (i.e., undergraduate or graduate)?
4. Is there a difference in student evaluations of Internet-assisted instruction based on gender and student status (i.e., undergraduate or graduate)?

Method

This section describes the procedures used during the study. Discussed are the participants, instrumentation, procedures, and data analysis.

Participants

Participants in this study consisted of all students enrolled in four sections of a course entitled Telecommunications via the Internet during the 1998-1999 academic year. This course was taught in the College of Education of a major Midwestern university. Both undergraduate and graduate students enrolled in and completed the course. Of the 82 participants, 52 (63.4%) were male and 30 (36.6%) were female. In terms of student status, 61 (74.4%) were undergraduate students and 21 (25.6%) were graduate students.

Instrumentation

A variety of instruments were used to collect data. Student attitudes toward Internet-assisted instruction were assessed through a 21-item scale developed by the researcher—Student Attitude Toward Internet Instruction scale (SATII). Student response options to the SATII scale were (1) strongly agree, (2) agree, (3) disagree, and (4) strongly disagree. Internal consistency of the SATII scale in a pilot study conducted by Wen (personal communication) using Cronbach's Alpha was .89. Internal consistency of the SATII scale using Cronbach's Alpha was .88 in the current study. Students' learning styles were determined by their scores on the Group Embedded Figures Test. The Group Embedded Figures Test was selected for use in this study because its reliability had been previously certified at .82 (Witkin et al., 1971). In addition, the Group Embedded Figures Test has been used in a similar study involving new instructional technology (i.e., Miller, 1997). The quality of Internet-assisted instruction was assessed through a modified version of the College of Education's—Form E—Student Evaluation of Instruction Form (SEIF). Student response options for each of the ten items of the SEIF were (1) excellent, (2) good, (3) fair, and (4) poor. Internal consistency of the SEIF using Cronbach's Alpha was .89 in the current study. Students were also asked to self report information regarding gender and student status (i.e., undergraduate or graduate).

Procedures

The instructor, content, and course structure remained the same throughout the study period. To reduce the possibility of self-selection bias, students were not told that the course was Internet assisted until the first scheduled class session. During the first class meeting, course objectives, assignments, and procedures on how to use the course web site were explained to the students. All course information including the syllabus, handouts, instructions, and Internet resources were either posted on or linked to the course web site. All communication, including the submission of assignments, between students and instructor was designed to be completed through the use of e-mail. It should be noted that on occasion, students would either stop by to see or call the instructor regarding course assignments and expectations. Students were required to attend all four class sessions in order to review course material or to complete proctored assessment activities. After completing the final exam, a large envelope containing the Group Embedded Figures Test, the SATII scale, the SEIF instrument, and a demographic data form were distributed to the students. Students were asked to remove the Group Embedded Figures Test from the packet so that it could be administered as prescribed in the test manual. After completing the Group Embedded Figures Test, students were asked to complete the remaining survey instruments and to return them to the researcher's assistant in the large envelope with which they were provided. No student names or other identifiers ever appeared on the Group Embedded Figures Test or any of the other survey instruments. The variables regarding age, major, and scores were not included in this study at the request of the College of Education's Human Subjects Compliance Officer.

Data Analysis

A variety of analytical techniques were used to answer the four research questions. Question one sought to determine if there was a difference in student attitudes toward Internet-assisted instruction based on student learning style. To answer question one, a one-way ANOVA was used to compare the means. Question two strove to determine if there was a difference in student evaluations of Internet-assisted instruction based on student learning style. Question two was answered through the use of a one-way ANOVA. Question three examined if there was a difference in student attitudes toward Internet-assisted instruction based on gender and student status (i.e., undergraduate or graduate). T-tests were used to answer question three. Question four investigated if there was a difference in student evaluations of Internet-assisted instruction based on gender and student status (i.e., undergraduate or graduate). Question four was answered through the use of t-tests. All tests of significance were conducted at alpha = .05. For questions involving learning style, student scores on the Group Embedded Figures Test ranged from 0 to 18. For purposes of analysis, a categorization procedure outlined by Garton (personal communication) was used—field dependent (0 to 10), neutral (11 to 13), and field independent (14 to 18). Overall attitude and evaluation means were determined by summing the individual item means for each student and dividing by the total number of students.

Findings

This section outlines the results of the data analysis of student attitudes toward and evaluation of Internet-assisted instruction. First, an examination of student attitudes toward Internet-assisted instruction based on learning style is presented. Second, an analysis of student evaluation of Internet-assisted instruction based on learning style is put forward. Third, a review of student attitudes toward Internet-assisted instruction based on two selected characteristics, gender and student status (i.e., undergraduate or graduate), is reported. Lastly, student evaluations of Internet-assisted instruction based on the two selected characteristics, gender and student status (i.e., undergraduate or graduate), is noted.

Student Attitudes

Research question one sought to determine if there was a difference in student attitudes toward Internet-assisted instruction based on learning style. Presented in Table 1 are the attitude means and standard deviations for the field dependent, neutral, and field independent learning style categories. The participants' overall attitude mean score toward Internet-assisted instruction was 1.93, slightly higher than an "agree" response. The neutral learning style category had the most positive attitude toward Internet-assisted instruction with a mean score of 1.65 and a range of 1.00 to 2.19. A one-way ANOVA was used to test whether a significant difference existed between the attitude score means. Results of the ANOVA analysis, presented in Table 2, F (2,79) = 2.97, p < .057, indicated that the mean differences among the learning style categories were not significant at alpha = .05.

Table 1
Attitude Score Means and Standard Deviations for Participants by Learning Style (N = 82)

Learning Style	N	Mean[a]	Standard Deviation	Range[b]	
				Min	Max
Field Dependent	47	1.98	0.48	1.14	2.71
Neutral	9	1.65	0.36	1.00	2.19
Field Independent	26	1.94	0.29	1.14	2.48
Total	82	1.93	0.39	1.00	2.71

[a] The lower the score the more positive the attitude.
[b] Maximum high is 1 (strongly agree); minimum low is 4 (strongly disagree).

Table 2
Analysis of Variance Outcomes for Attitude Scores and Learning Style (N = 82)

Source	df	Sum of Squares	Mean Squares	F Value	P>F
Learning Style	2	0.842	0.421	2.97	0.057
Error	79	11.194	0.142		
Total	81	12.036			

Student Evaluation

The thrust of research question two was to determine if a difference existed in student evaluation of Internet-assisted instruction based on learning style. Presented in Table 3 are the evaluation means and standard deviations for the field dependent, neutral, and field independent learning style categories. The participants' overall evaluation of Internet-assisted instruction mean score was reported at 1.60, a "good" rating. The neutral learning style category had the highest evaluation of Internet-assisted instruction with a mean score of 1.39 and a range of 1.15 to 1.63. A one-way ANOVA was used to test whether a significant difference existed between the evaluation score means. Results of the ANOVA analysis, Table 4, F (2,79) = 2.90, p < .061 indicated that the mean differences among the learning style categories were not significant at alpha = .05.

Student Attitude Characteristics

Question three sought to determine if a difference existed in student attitudes toward Internet-assisted instruction based on two selected characteristics, gender and student status (i.e., undergraduate or graduate). As presented in Table 5, female students reported a slightly more positive attitude toward Internet-assisted instruction than did male students. Results of the t-test analysis, t (80) = 1.25, p < .22, indicated that the difference between gender groups was not significant at alpha = .05. Also noted in Table 5, graduate students reported a slightly more positive attitude toward Internet-assisted instruction than did undergraduates. However, t-test analysis of for the difference between student status groups, t (80) = 0.66, p < .51 was not significant at alpha = .05.

Table 3
Evaluation Score Means and Standard Deviations for Participants by Learning Style (N = 81)

Learning Style	N	Mean[a]	Standard Deviation	Rangeb Min	Max
Field Dependent	47	1.54	0.46	1.00	2.90
Neutral	9	1.39	0.31	1.00	1.80
Field Independent	26	1.77	0.52	1.00	2.90
Total	82	1.60	0.48	1.00	2.90

[a] The higher the score the more positive the evaluation.
[b] Maximum high is 1 (excellent); minimum low is 4 (poor).

Table 4
Analysis of Variance Outcomes for Evaluation Scores and Learning Style (N = 82)

Source	df	Sum of Squares	Mean Squares	F Value	P>F
Learning Style	2	1.266	0.633	2.904	0.061
Error	79	17.223	0.218		
Total	81	18.489			

Table 5
Means and Standard Deviations of Student Attitudes Toward Internet-Assisted Instruction Based on Selected Characteristics

Characteristic	Mean[a]	Standard Deviation
Gender		
Male (n = 52)	1.97	0.39
Female (n = 30)	1.86	0.38
Student Status		
Undergraduate (n = 61)	1.91	0.39
Graduate (n = 21)	1.98	0.37

[a] 1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree

Student Evaluation Characteristics

The focus of question four was to determine if a difference existed in student evaluation of Internet-assisted instruction based on two selected characteristics, gender and student status (i.e., undergraduate or graduate). As presented in Table 6, female students reported a slightly higher evaluation of Internet-assisted instruction than did male students participating in the study. Results of the t-test analysis, t (80) = 0.33, p < .74 indicated that the difference between gender groups was not significant at alpha = .05. Also noted in Table 6, graduate students reported a slightly higher evaluation of Internet-assisted instruction than did undergraduates. However, t-test analysis of the difference between student status groups, t (80) = 0.99, p < .32 was not significant at alpha = .05.

Table 6
Means and Standard Deviations of Student Evaluation of Internet-Assisted Instruction Based on Selected Characteristics

Characteristic	Mean[a]	Standard Deviation
Gender		
Male (n = 52)	1.60	0.44
Female (n = 30)	1.57	0.54
Student Status		
Undergraduate (n = 61)	1.57	0.46
Graduate (n = 21)	1.68	0.53

[a] 1 = excellent; 2 = good; 3 = fair; 4 = poor

Discussion

As is the case with most studies, caution should be used when interpreting the results of the current investigation. Specifically, it should be noted that the study participants were limited to those students enrolled in four sections of one course at a major Midwestern university and that these student may not necessarily be representative of students who enrolled in all Internet-assisted courses at that university. In addition, all of the ANOVA models in which the field dependent, neutral, and field independent learning style category means were compared produced results that were not statistically significant. Part of the statistically significant results may be due to the low number of participants in the data set that scored in the neutral category learning style.

Since Internet-assisted instruction is relatively new, few studies have been conducted examining student attitudes toward and/or evaluation of Internet-assisted instruction (e.g., Townley,1997; Verbrugge, 1997; Well & Anderson, 1997). In a descriptive study of student and instructor perceptions of Internet-assisted instruction in Colorado community colleges, Townley (1997) put forward a number of worthwhile observations. First, 80% of the students reported having a medium, high, or expert level of competence when it came to using computers. Second, 78% of the students participating in the study indicated that they either agreed or strongly agreed when asked if Internet-assisted courses were user friendly. Third, student responses indicated that they were pleased with the amount of contact with their instructors, 86% agreed or strongly agreed that there was enough interaction. Fourth, when queried regarding their perceptions of Internet-assisted course rigor, 90% of the students indicated they contained sufficient thoroughness. Lastly, Townley stated that 90% of the students responded excellent or very good when asked to provide an overall rating of their Internet-assisted instruction. An interesting thought emerges from the Townley study in that the vast majority of students (80%) reported being proficient computer users prior to taking an Internet-assisted course. Being so highly adept with computers may be one reason why the students in Townley's study had such positive attitudes toward and evaluation of Internet-assisted instruction. In a related study, Verbrugge (1997) reported that positive student evaluations resulted in a trial run of an Internet-assisted course offering. The current study is congruent with both the Townley (1997) and Verbrugge (1997) investigations in that students responded favorably to the Internet-assisted instruction examined in this study.

Conclusions and Implications for Practice

While no statistically significant differences were found as a result of this study, a number of conclusions can be put forward that have very positive consequences for those administrators and instructors planning to offer Internet-assisted instruction. First, as supported by the p values in Table 2 and Table 4, neither field dependent, neutral, nor field independent learners differ in their attitudes toward or evaluation of Internet-assisted instruction. Further, a review of the means in Table 1 and Table 3 for student attitudes toward and evaluation of Internet-assisted instruction find means of 1.93 and 1.60, respectively. The student attitude toward Internet-assisted instruction mean score of 1.93 represents an overall positive view sightly higher than "agree" response as does the student evaluation mean score of 1.60, slightly higher than "good" evaluation. Second, there is no difference in student attitudes toward and evaluation of Internet-assisted instruction based on the two selected characteristics of gender and student status (i.e., undergraduate and graduate). The t-test analysis of the data supports this no difference in student attitudes toward or evaluation of Internet-assisted instruction based on the two selected characteristics—gender and student status (i.e., undergraduate or graduate).

Given the above conclusions, the following implications for practice are offered. Finding that the differences among the various learning style categories and selected student characteristics were not significant may be of little practical consequence due to the relatively positive attitudes toward and good evaluations of Internet-assisted instruction by students. What is important are the positive attitudes and high evaluations of Internet-assisted instruction by all types of learners when learning styles and selected student characteristics are compared. The realization that students as a whole share the same affirmative views toward and evaluation of Internet-assisted instruction has very positive ramifications. Administrators and instructors who have, or are looking, to offer instruction via the Internet can press forward with the process confident that it will be well received by students.

Recommendations for Further Research

Based on the analysis of data and the review of related literature, the following recommendations for further research are offered:

1. A study should be conducted exploring student attitudes toward and evaluation of Internet-assisted instruction in courses that typically do not include a computer-based component. A study of this nature would provide insight into how well Internet-assisted instruction is received in such courses.

2. A study examining student attitudes toward and evaluation of instruction relative to face-to-face and Internet-assisted delivery of the same course should be conducted. An investigation of this type would provide insight into student perceptions of these different course delivery methods.

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Teaching Concerns of Traditionally and Alternatively Certified Marketing Educators

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Abstract

Over the past few decades, there has been considerable interest in how teachers develop as professionals overtime. The purpose of this study was to compare the concerns of beginning and experienced traditionally certified and beginning and experienced alternatively certified marketing teachers across seven broad categories—human relations, classroom management and routines, instructional activities and methods, personal concerns, conditions of work, evaluation problems, and professional growth. The results of the study indicate that while there are statistically significant differences between beginning and experienced traditionally certified and beginning and experienced alternatively certified marketing teachers, there may be little practical difference in their concerns. Further, both beginning and experienced traditionally certified and beginning and experienced alternatively certified marketing teachers reported relatively low levels of concern on most items in the seven categories of concern.

Introduction

The idea that teachers develop overtime as professionals and that their concerns and abilities change as they develop has been well documented (Reeves & Kazelskis, 1985). Numerous researchers have examined the differences in the development overtime of teachers in a variety job facets (e.g., Echternacht, 1981; Korevaar, Bergen, & Theo, 1992). Echternacht (1981) examined the instructional problems of first-year and experienced business education teachers. The relationship between teacher experience and their perceptions of and reactions to problematic classroom situations was examined by Korevaar et al. (1992). Specific to studies including marketing teachers, Alexander, Ober, Davis, and Underwood (1997) and Underwood and Davis (1987) investigated the teaching concerns of prospective and experienced business and marketing education teachers. The common thread that runs through all of these studies is that prospective, beginning, and experienced teachers all share common perceptions with some facets of their jobs and marked differences with other job components. The interest in the concerns and abilities of teachers as they develop overtime is not likely to decrease. As noted by Bendixen-Noe and Redick (1995), "With the increasing push for accountability in our educational system, the professional development of teachers will remain a current focus in the improvement of education." (p. 52) Further, as stated by Discoll and Shirey (1985), ". . . teacher educators have begun viewing the entire professional continuum as a paradigm for research and development." (p. 2) Lastly, as expressed by Paisley (1990) ". . . special attention must be given to the process of growth and continued development for teachers." (p. 20)

While much discussion has been focused in the literature on teacher development overtime, there has also been considerable debate surrounding alternative versus traditional teacher preparation methods (Baird, 1990; Hawk, Coble, & Swanson, 1985; Jelmberg, 1996; Littleton & Holcomb, 1994; Zumwalt, 1996). In fact, teacher certification has been reported to be one of the most important issues facing the education profession (Roth, 1986). Indeed, the issue of alternative certification has been at the forefront of numerous educational improvement recommendations formed to enhance teacher quality and to reduce teacher shortages (Hutton, Lutz, & Williamson, 1990). Alternative certification options have been developed because traditional, university-based programs have been deemed ineffective by many policy makers at preparing teacher (Ashton, 1996). Roth (1986) explained the process of alternative certification as allowing an individual with a baccalaureate degree in a content area to teach after completing a short sequences of courses and/or fieldwork as opposed to completing the usual undergraduate teacher preparation program.

Numerous investigators have examined teacher challenges, concerns, and problems in general (e.g., Arroyo & Sugawara, 1993; Linnell, 1994; Matthews, 1993) while others who have focused their work to included marketing teachers (e.g., Alexander, Davis, & Underwood, 1997; Alexander, et al. 1997a; Heath & Price, 1987; Price, 1988; Underwood & Davis, 1985; Underwood & Davis, 1987; Wray, 1988; Wray & Davis, 1990). The perceived concerns of secondary business and distributive education teachers in Indiana was explored by Underwood and Davis (1985). The problems experienced by first-year marketing teachers in Virginia were investigated by Heath and Price (1987). A study of the concerns of prospective and experienced business and marketing teachers was undertaken by Underwood and Davis (1987). Workplace concerns of Illinois marketing education teachers were explored by Wray (1988). The factors impeding teacher involvement in adult marketing education was studied by Price (1988). A comparative study of the perceived challenges facing marketing teachers in Illinois and Indiana was conducted by Wray and Davis (1990). The teaching difficulties of business and marketing educators at the secondary level was conducted by Alexander et al. (1997). In yet another study, the concerns of prospective and experienced secondary business and marketing teachers were examined by Alexander et al. (1997a). Specific to concerns based on certification method, Heath-Camp, Camp, and Adams-Casmus (1990) conducted a qualitative study in which the challenges and problems of two marketing teachers were examined.

A review of the literature revealed varied descriptions of alternative certification. In one example, Oliver and McKibbin (1985) described alternative certification as "teacher certification that departs significantly from traditional teacher education programs." (p. 21) An alternatively certified teacher for the purpose of this study was defined as a marketing teacher who obtained certification through a route other than a traditional four-year, undergraduate marketing teacher preparation program. In addition, a beginning teacher was defined as a teacher having four or fewer years of experience in the field of marketing education. This study is significant in that it builds upon and adds to the previous studies of teacher concerns by attempting to determine if differences exist between beginning and experienced traditionally certified and beginning and experienced alternatively certified marketing teachers. The need to study the concerns of both beginning and experienced traditionally certified teachers and beginning and experienced alternatively certified teachers is further magnified considering the number of institutions offering alternative certification in marketing education. In a status study of preservice marketing teacher education programs, Ruhland (1995/1996) reported that of the 41 responding programs in her study, 21(51.2%) offered post-baccalaureate marketing teacher certification. As noted by Powell (1991-1992), "Though reports have emphasized the importance of alternative teacher education tracts, research is limited on pedagogical development over time of preservice teachers in these programs." (p. 17) Further, Erekson and Barr (1985) noted the need for more research when they stated that there is the ". . . need to investigate more fully the effects of alternative credentialed teachers on the school and classroom environment." (p. 19) They further noted "That there is limited research on whether provisionally certified vocational education teachers are as effective in instructing students as their counterparts who complete a teacher education program." (p. 17) Specifically, the findings of this study may be used to improve preservice and inservice teacher education by addressing identified areas of concern to beginning and experienced traditionally certified and beginning and experienced alternatively certified marketing teachers.

Purpose

The purpose of this study was (a) to determine the most serious concerns of beginning and experienced marketing teachers, (b) to determine the level of concern among beginning and experienced marketing teachers in relation to seven categories of teacher concern, and (c) to determine the relative difference on the 91 concern items based on teacher certification method. Specifically, answers to the following questions were sought:

1. What are the five most serious concerns of beginning and experienced marketing teachers based on certification method?

2. Are there differences between beginning and experienced marketing teachers within the seven broad categories of concern: human relations, classroom management and routines, instructional activities and methods, personal concerns, conditions of work, evaluation problems, and professional growth based on certification method?

3. Are there differences between beginning and experienced marketing teachers in terms of the 91 individual concerns based on certification method?

Method

This section describes the procedures used during the study. Discussed are the participants, instrument, and data analysis.

Participants

Participants consisted of marketing teachers attending the four regional inservice meetings held throughout Missouri in the fall of 1998. A teacher concerns survey was distributed by the researcher to collect data. Identifiers were not included on the instrument so all participant responses were completely anonymous. A total of 141 surveys were distributed and collected during these regional meetings. Though not a probability sample, these 141 respondents represent 70.1% of the 201 marketing teachers in Missouri during the 1998 - 1999 academic year. Of these 141 participants, 13 (9.3%) and 29 (20.2%) were beginning and experienced traditionally certified teachers and 48 (34.2%) and 51 (36.3%) were beginning and experienced alternatively certified teachers.

Instrument

Concerns of marketing teachers were appraised through the use of a survey originally developed by Underwood (1974) and later modified by Underwood and Davis (1985, 1987). The instrument is composed of 91 questions grouped into seven broad categories: human relations, classroom management and routines, instructional activities and methods, personal concerns, conditions of work, evaluation problems, and professional growth. These questions were arranged to form a 91-item, Likert-type scale with five scoring categories. Response options were (1) not difficult, (2) slightly difficult, (3) moderately difficult, (4) significantly difficult, and (5) extremely difficult. The instrument was selected for use in this study because of its previous use in studies involving marketing teachers (e.g., Alexander et al., 1997; Alexander et al., 1997a; Underwood & Davis, 1985;

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Underwood & Davis, 1987; Wray, 1988). Reliability of the seven categories tested with Cronbach's Alpha were reported to be above 0.70 in an earlier study which included marketing teachers (Alexander et al., 1997a). Reliability coefficients for the seven categories in the present study and for the overall instrument were all above 0.85. Participants were also asked to supply information regarding their method of certification and years of teaching experience in marketing education.

Data Analysis

A variety of analytical techniques were used to answer the three research questions. To determine the five most serious concerns of beginning and experienced marketing teachers based on certification method, means were used. Significant differences between beginning and experienced marketing education teacher based on certification method for the seven category means were determined using t-tests. Category means were determined by summing the individual item means in each category for each respondent and dividing by the total number of respondents in that category. T-tests were used to determine differences between beginning and experienced marketing teachers based on certification method for the individual items of concern. Alpha for all tests of significance was set at .05.

Findings

This section provides a comparison of the concerns of beginning and experienced marketing teachers based on certification method. First, the five most serious concerns of beginning and experienced marketing teachers based on certification method are presented. Second, differences between beginning and experienced marketing teachers on the seven categories of concern: human relations, classroom management and routines, instructional activities and methods, personal concerns, conditions of work, evaluation problems, and professional growth based on certification method are put forward. Lastly, differences between beginning and experienced marketing teachers based certification method for individual items of concern are reported.

Five Most Serious Concerns

Question one addressed the five most serious concerns of beginning and experienced marketing teachers based on certification method. As presented in Table 1, two items emerged as top concerns for all four groups of marketing teachers—demands on time and developing good work and study habits in students. The item demands on time was the top concern for experienced traditionally certified and beginning and experienced alternatively certified and the second highest concern for beginning traditionally certified marketing teachers with means of 3.21, 2.85, 3.45, and 3.23, respectively. These means represent a moderately difficult level of concern by all four groups of marketing teachers in regards to demands on time. The item developing good work and study habits in students was also among the top five concerns of all four groups of marketing teachers in this study. Means for the item developing good work and study habits in students for beginning and experienced traditionally certified and beginning and experienced alternatively certified marketing teachers were reported at 2.92, 3.17, 2.71, and 3.06, respectively. These means represent a moderately difficult level of concern for developing good work and study habits in students by all four groups of marketing teachers.

Of the most serious concerns of beginning traditionally certified marketing teachers, two were from the instructional activities and methods category and one each from the categories personal concerns, professional growth, and classroom management and routines. The category distribution of the most serious concerns of experienced traditionally certified marketing teachers were two from instructional activities and methods, and one each from the categories evaluation problems, conditions of work, and personal concerns. Of the most serious concerns of beginning alternatively certified marketing teachers, three were from the instructional activities and methods category and one each from the categories personal concerns and professional growth. The category grouping of the most serious concerns of experienced alternatively certified marketing teachers were two from professional growth and one each from conditions of work, instructional activities and methods, and personal concerns. Items from the category human relations did not emerge among the top five concerns of any the four groups of marketing teachers.

Differences by Category of Concern

The second question sought to determine if there were differences between beginning and experienced marketing teachers on the seven categories of concern: human relations, classroom management and routines, instructional activities and methods, personal concerns, conditions of work, evaluation problems, and professional growth based on certification method. As presented in Table 2, no significant differences between beginning and experienced traditionally certified marketing teachers were revealed on the seven categories of concern. Significant differences between beginning and experienced alternatively certified marketing teachers were reported on three of the seven categories of concern: professional growth, personal concerns, and classroom management and routines. In each of these three cases, experienced traditionally certified marketing teachers reported a significantly higher level of concern than did beginning alternatively certified marketing teachers.

Differences by Individual Concerns

The third question sought to determine if differences existed between beginning and experienced marketing teachers for the 91 items composing the concerns survey based on certification method. The results of the data analysis are presented in Table 3. A review of Table 3 revealed several items in which significant differences between beginning and experienced marketing teachers based on certification method did occur.

Table 1

Most Serious Teaching Concerns of Beginning and Experienced Marketing Teachers Based on Certification Method

Concern	Mean[a]
Beginning traditionally certified marketing teachers	
1.Opportunities to observe other teachers	3.23
2.Demands on Time	3.15
3.Motivating student interest and response	3.08
4.Developing good work and study habits in students	2.92
5.Individualizing instruction	2.86
Experienced traditionally certified marketing teachers	
1.Demands on time	3.21
2.Developing good work and study habits in students	3.17
3.Interpreting and utilizing standardized achievement and aptitude tests	3.00
4.Having enough school time for planning and preparing	2.97
5.Stimulating critical thinking	2.83
Beginning alternatively certified marketing teachers	
1.Demands on time	2.85
2.Developing good work and study habits in students	2.71
3.Opportunities to observe other teachers	2.65
4.Stimulating critical thinking	2.56
5.Giving students a share in planning objectives and learning activities	2.48
Experienced alternatively certified marketing teachers	
1.Demands on time	3.45
2.Opportunities to observe other teachers	3.14
3.Developing good work and study habits in students	3.06
4.Opportunities for advancement	3.04
5.Having enough school time for planning and preparing	2.84

[a]1 = not difficult; 5 = extremely difficult

Table 2

Differences Between Beginning and Experienced Marketing Education Teachers by Category of Concern Based on Certification Method

	Mean[a] Traditional				Mean[a] Alternative			
Category	Beginning	Experienced	df	t	Beginning	Experienced	df	t
Human relations	1.70	1.71	39	-0.03	1.49	1.56	97	-0.63
Classroom management and routines	2.22	2.19	39	0.14	1.85	2.14	97	-2.11*
Instructional activities and methods	2.29	2.20	39	0.38	1.94	2.09	97	-1.21
Personal concerns	1.76	1.72	39	0.22	1.60	1.92	97	-2.67*
Conditions of work	1.84	1.85	39	-0.07	1.85	2.00	97	-1.15
Evaluation problems	1.96	2.16	39	-0.86	1.97	2.14	97	-1.26
Professional growth	2.21	2.27	39	-0.18	2.05	2.45	97	-2.53*

[a]1 = not difficult; 5 = extremely difficult

*significant at alpha = .05

Table 3

Concerns of Beginning and Experienced Marketing Education Teachers Based on Certification Method

	Traditionally Certified Teachers				Alternatively Certified Teachers			
	Mean[a]				Mean[a]			
Category and Concern	Begin.	Exper.	df	t	Begin.	Exper.	df	t
Human relations								
Establishing good relationships with the principal	1.38	1.52	40	-0.51	1.40	1.36	96	0.23
Establishing good relationships with administrative personnel other than the principal	1.38	1.62	40	-0.85	1.44	1.59	97	-0.91
Establishing good relationships with other teachers	2.08	1.31	40	2.79*	1.35	1.33	97	0.17
Establishing good relationships with parents	1.77	1.48	40	1.17	1.54	1.47	97	0.48
Establishing good relationships with students during school hours	1.77	1.55	40	0.76	1.40	1.37	97	0.17
Establishing and maintaining proper relationships with students after school hours	1.69	1.50	39	0.73	1.38	1.66	96	-1.50
Establishing good relationships with non-certified personnel	1.31	1.17	40	0.78	1.06	1.22	97	-1.70
Establishing effective communications and working relationships with supervisors	1.69	1.69	40	0.01	1.48	1.43	97	0.33
Understanding community problems, cultures, and traditions	2.08	2.31	40	-0.59	1.79	1.73	97	0.33
Understanding expectations of administrators and supervisors	1.77	2.07	40	-0.84	1.69	1.76	97	-0.44
Establishing working relationships with guidance personnel	2.45	2.61	37	-0.33	1.91	2.35	85	-1.66
Classroom management and routines								
Handling problems of student control and discipline	2.46	2.00	39	1.37	1.90	1.76	97	0.78
Motivating student interest and response	3.08	2.38	40	1.91	2.38	2.49	97	-0.57
Keeping records and making reports	2.38	2.48	40	-0.29	1.90	2.59	97	-3.38*
Budgeting class time	2.62	2.34	40	0.68	2.00	2.39	97	-1.92
Determining policies for democratic student control	2.62	2.17	40	1.20	1.85	2.23	93	-1.83
Handling problems of absences and tardiness	2.46	2.59	40	-0.33	2.08	2.39	97	-1.36
Dispensing and collecting materials and papers	1.85	1.86	40	-0.06	1.52	1.84	97	-1.74
Developing rapport with students	1.54	1.72	40	-0.68	1.35	1.45	97	-0.70
Understanding the behavior of pre- and/or early adolescents	1.54	2.07	39	-1.63	1.67	2.14	97	-2.74*
Instructional activities and methods								
Formulating instructional objectives	2.54	2.24	40	0.86	1.69	1.96	97	-1.60
Sequencing instruction	2.62	2.10	40	1.58	1.71	1.92	97	-1.22
Explaining subject matter	1.85	1.79	40	0.20	1.54	1.49	97	0.42
Prescribing instruction	1.85	1.76	40	0.31	1.65	1.67	95	-0.10
Individualizing instruction	2.86	2.76	40	0.20	2.31	2.61	97	-1.33
Providing enrichment activities	2.85	2.52	40	0.87	2.15	2.47	97	-1.73
Providing remedial activities	2.85	2.86	40	-0.04	2.40	2.69	97	-1.42
Selecting instructional materials	2.38	2.14	40	0.75	1.92	2.00	97	-0.51
Making appropriate and meaningful assignments	2.31	2.34	40	-0.11	1.98	2.04	96	-0.33
Planning and preparing lessons	2.31	2.00	40	0.96	1.63	1.92	97	-1.86
Stimulating critical thinking	2.69	2.83	40	-0.30	2.56	2.53	97	0.15
Using audio-visual equipment	1.62	1.48	40	0.59	1.27	1.65	97	-2.44*
Utilizing instructional materials	1.85	1.62	40	0.94	1.50	1.75	97	-1.58
Using community resources	2.23	2.00	39	0.81	2.26	2.24	96	0.11
Leading class and small group discussions	1.69	1.83	40	-0.43	1.63	1.73	97	-0.53

table continued

	Traditionally Certified Teachers				Alternatively Certified Teachers			
	Mean[a]				Mean[a]			
Category and Concern	Begin.	Exper.	df	t	Begin.	Exper.	df	t
Using question-asking techniques	1.85	2.03	40	-0.52	1.77	1.75	97	0.13
Giving students a share in planning objectives and learning activities	2.69	2.76	40	-0.20	2.48	2.65	95	-0.78
Developing good work and study habits in students	2.92	3.17	40	-0.65	2.71	3.06	97	-1.50
Handling controversial topics	2.62	2.28	40	1.03	2.00	2.06	97	-0.32
Mastering subject matter	1.77	1.48	40	1.30	1.63	1.69	97	-0.39
Personal concerns								
Living conditions	1.38	1.24	40	0.84	1.23	1.44	96	-1.46
Salary	2.23	2.10	40	0.35	1.87	2.27	96	-1.77
Physical health	1.31	1.38	40	-0.34	1.40	1.94	97	-2.81*
Personal appearance	1.08	1.55	40	-1.83	1.19	1.69	97	-3.10*
Poise and self-confidence	1.54	1.34	40	0.92	1.40	1.62	96	-1.49
Leisure-time activities	2.00	1.83	40	0.56	2.04	1.73	97	1.40
Demands on time	3.15	3.21	40	-0.12	2.85	3.45	97	-2.35*
Accepting school's philosophy and objectives	1.77	1.72	40	0.20	1.46	1.94	97	-2.74*
Adjusting to standards of expected teacher conduct	1.54	1.48	40	0.26	1.31	1.51	97	-1.44
Academic freedom	1.31	1.38	40	-0.44	1.29	1.59	97	-2.18*
Conditions of work								
Quantity and quality of resources and materials	2.23	1.79	40	1.44	2.10	2.02	97	0.44
Quantity and quality of equipment	2.46	1.83	40	1.75	2.13	2.20	97	-3.31
Building facilities	2.15	1.97	40	0.50	1.96	2.39	97	-1.94
Class schedule	1.69	1.79	40	-0.46	1.73	1.90	97	-0.83
Student-teacher ratio	1.69	1.83	40	-0.49	1.83	2.00	97	-0.74
Number of different preparations	1.69	1.69	40	0.01	1.92	2.00	97	-0.36
Appearance of teaching environment	1.92	1.83	40	0.25	1.79	1.88	97	-0.49
Office and work space	2.38	2.00	40	0.89	2.17	2.14	97	0.12
Working with the secretarial and paraprofessional staff	1.31	1.28	40	0.19	1.25	1.63	97	-2.45*
Securing supplies	1.77	1.62	40	0.52	1.58	1.71	97	-0.82
Having enough school time for planning and preparing	2.38	2.97	40	-1.26	2.54	2.84	97	-1.11
Gaining administrative and supervisory support	1.46	2.03	40	-2.12*	1.77	2.02	97	-1.30
Length of class period	1.38	1.83	40	-2.02*	1.67	1.71	97	-0.20
Teaching assignment commensurate with training	1.62	1.52	40	0.41	1.52	1.36	96	1.24
Policies for personal business and sick leave	1.31	1.48	40	-0.71	1.23	1.51	97	-1.92
Assignment for extra duty	1.92	1.72	40	0.51	1.57	1.86	95	-1.42
Acquiring up-to-date equipment	2.23	2.03	40	0.54	2.27	2.35	97	-0.32
Having enough equipment for effective instruction	2.00	2.14	40	-0.39	2.23	2.37	97	-0.55
Evaluation problems								
Constructing teacher-made tests	2.54	2.45	40	0.22	2.02	2.33	97	-1.75
Using teacher-made tests to diagnose learning needs of students	2.77	2.76	40	0.03	2.33	2.63	97	-1.32
Grading tests	1.46	1.45	40	0.07	1.50	2.00	97	-3.01*
Administering tests	1.31	1.38	40	-0.34	1.29	1.55	97	-2.21*
Assigning grades	1.54	1.38	40	0.80	1.60	1.73	97	-0.78
Agreeing with school's grading policies and procedures	1.31	1.55	40	-0.91	1.47	1.73	96	-1.56

table continued

Category and Concern	Traditionally Certified Teachers				Alternatively Certified Teachers			
	Mean[a]				Mean[a]			
	Begin.	Exper.	df	t	Begin.	Exper.	df	t
Involving students in self-evaluation	2.23	2.41	40	-0.50	2.44	2.49	97	-0.23
Using tests to evaluate effectiveness of teaching materials and instructional materials	2.15	2.79	40	-1.67	2.15	2.31	96	-0.79
Interpreting and utilizing standardized achievement and aptitude tests	2.85	3.00	40	-0.39	2.52	2.58	96	-0.25
Administering standardized achievement and aptitude tests	2.54	2.17	40	1.01	2.23	2.18	95	0.20
Evaluating homework	1.46	2.00	40	-2.03*	1.83	1.88	97	-0.30
Evaluating affective outcomes of instruction	1.92	2.62	40	-1.95	2.25	2.29	97	-0.20
Professional growth								
Opportunities to observe other teachers	3.23	2.76	40	1.27	2.65	3.14	96	-1.94
Opportunities for advanced college work	2.46	2.55	40	-0.25	2.17	2.75	97	-2.31*
Opportunities for in-service work	2.00	2.00	40	0.00	1.85	2.22	97	-1.67
Supervisory assistance for improving teaching methods	2.46	2.22	38	0.63	1.96	2.53	96	-2.48*
Opportunities for advancement	2.23	2.68	39	-1.06	2.15	3.04	95	-3.47*
Opportunities to participate in professional organizations	1.85	1.66	40	0.66	1.57	1.92	96	-1.76
Availability of professional literature	1.69	2.03	40	-0.98	1.92	1.90	97	0.08
Opportunities to read professional literature	2.46	2.59	40	-0.31	2.46	2.78	97	-1.41
Opportunities to work in curriculum development and improvement	2.77	2.03	40	2.17	1.96	2.27	97	-1.34
Opportunities for democratic decision making on school policies and practices	2.30	2.52	40	-0.57	2.23	2.52	96	-1.22
Adequate policies for leaves of absence	1.58	1.79	39	-0.73	1.65	1.96	96	-1.55

[a] 1 = not difficult; 5 = extremely difficult
*significant at alpha = .05

Category one—human relations. Of the 11 items in this category, only one was reported to be significantly different between beginning and experienced traditionally certified marketing teachers—establishing good relationships with other teachers. No significant difference between beginning and experienced alternatively certified marketing teachers were reported in this category. In this category, all four groups of marketing teachers reported not difficult to slightly difficult levels of concern on all items. Specifically, all four groups of marketing teachers reported means between 1.17 and 2.45 four human relation items.

Category two—classroom management and routines. Of the nine items in this category, none were reported to differ significantly between beginning and experienced traditionally certified marketing teachers. By contrast, beginning and experienced alternatively certified marketing teachers indicated significant differences on two the nine items—keeping records and making reports and understanding the behavior of pre-and/or early adolescents. In both of these cases, experienced traditionally certified marketing teachers reported higher levels of concern. In this category, all four groups of marketing teachers reported not difficult to slightly difficult levels of concern for most items. Specifically, all four groups of marketing teachers reported means between 1.35 and 2.59 for classroom management and routine items.

Category three—instructional activities and methods. Of the 20 items in this category, none were found to differ significantly between beginning and experienced traditionally certified marketing teachers. By comparison, beginning and experienced alternatively certified marketing teachers indicated a significant difference on only one of the 20 items—using audio-visual equipment. For this item, experienced alternatively certified marketing teachers reported a significantly higher level of concern than did beginning alternatively certified marketing teachers. In this category, all four groups of marketing teachers reported not difficult to moderately difficult levels of concern for all items. Specifically, all four groups of marketing teachers reported means between 1.27 and 3.06 for instructional activities and methods items.

Category four—personal concerns. Of the 10 items in this category, none were found to differ significantly between beginning and experienced alternatively certified marketing teachers. By contrast, beginning and experienced alternatively certified marketing teachers indicated a significant difference on four of the ten items—physical health, personal appearance, demands on time, and accepting school's philosophy and objectives. In this category, all four groups of marketing teachers reported not difficult to moderately difficult levels of concern for all items. Specifically, all four groups of marketing teachers reported means between 1.19 and 3.45 for personal concern items.

Category five—conditions of work. Of the 18 items in this category, two items were found to differ significantly between beginning and experienced traditionally certified marketing teachers—gaining administrative and supervisory support and length of class period. In both of these cases, experienced traditionally certified marketing teachers reported higher levels of concern. By contrast, beginning and experienced alternatively certified marketing teachers indicated a significant difference on one of the 18 items—working with the secretarial and paraprofessional staff. With this item, experienced alternatively certified marketing teachers reported a higher level of concern than did beginning alternatively certified marketing teachers. In this category, all four groups of marketing teachers reported not difficult to moderately difficult levels of concern for all items. Specifically, all four groups of marketing teachers reported means between 1.25 and 2.97 for conditions of work items.

Category six—evaluation problems. Of the 12 items in this category, one item was found to differ significantly between beginning and experienced traditionally certified marketing teachers—evaluating homework. In this case, experienced traditionally certified marketing teachers reported a higher level of concern. By contrast, beginning and experienced alternatively certified marketing teachers indicated a significant difference on two of the 18 items—grading tests and administering tests. In both cases, experienced traditionally certified marketing teachers reported higher levels of concern than did beginning traditionally certified marketing teachers. In this category, all four groups of marketing teachers reported not difficult to moderately difficult levels of concern for all items. Specifically, all four groups of marketing teachers reported means between 1.29 and 3.00 for evaluation problem items.

Category seven—professional growth. Of the 11 items in this category, none were found to differ significantly between beginning and experienced traditionally certified marketing teachers. By contrast, beginning and experienced alternatively certified marketing teachers indicated a significant difference on three of the 11 items—opportunities for advanced college work, supervisory assistance for improving teaching methods, and opportunities for advancement. In all three cases, experienced traditionally certified marketing teachers reported higher levels of concern than did beginning traditionally certified marketing teachers. In this category, all four groups of marketing teachers reported slightly difficult to moderately difficult levels of concern for all items. Specifically, all four groups of marketing teachers reported means between 1.57 and 3.23 for professional growth items.

Conclusions and Discussion

As is the case with most studies, caution should be used when interpreting the result of the current study. For example, it should be noted that the study participants were not a probability sample and thus may not necessarily be representative of all marketing teachers in Missouri. On a positive note, the 141 participants in this study did represent 70.1% of Missouri's 201 marketing teachers during the 1998 - 1999 academic year. Further, data were collected anonymously by the researcher. This anonymity during the data collection process may have resulted in more honest participant responses since some questions were of a touchy nature. Both the high rate of participation and the anonymity of the responses enhance the credibility of this study's findings. The findings of this study relative to the concerns of beginning and experienced marketing teachers based on certification method support the following conclusions.

First, as supported by data in Table 2 and Table 3, neither beginning and experienced traditionally certified marketing teachers nor beginning and experienced alternatively certified marketing teachers report major concerns. A review of the means in Table 2 for the seven factors revealed no category of concern mean greater than 2.45, or a slightly difficult level of concern for all four groups of marketing teachers. Table 3 revealed no items with means in either the significantly difficult or extremely difficulty categories. More specifically, 59 of the item means for all four groups of marketing teachers were < 2.5, or a slightly difficult level of concern. These 59 item means of < 2.5 represented well over half (61.1%) of the 91 items on the teacher concerns survey.

Second, beginning and experienced traditionally and beginning and experienced alternatively certified marketing teachers tend not to differ in their concerns. Significant differences between beginning and experienced traditionally certified marketing teachers were found on only 4 (4.4%) of the 91 items. Further, significant differences between beginning and experienced alternatively certified marketing teachers were found on only 13 (14.3%) of the 91 items. In terms of the entire survey, there appears to be little practical difference between beginning and experienced traditionally certified marketing teachers and between beginning and experienced alternatively certified marketing teachers.

Third, as supported by data in Table 1, all four groups of marketing teachers have similar top concerns. A review of the five most serious concerns of marketing teachers revealed that two items appear on the lists of all four groups—demands on time and developing good work and study habits in students. Interestingly, as presented in Table 3, all four groups of marketing teachers reported the most concern with the same item in four of the seven categories. Specifically, items of most concern in these four categories were as follow: human relations—establishing working relationships with guidance personnel; instructional activities and methods—developing good work and study habits in students; personal concerns—demands on time; professional growth—opportunities to observe other teachers.

In a study conducted by Underwood and Davis (1985) the perceived concerns of beginning and experienced business and distributive education teachers were explored. No significant differences were detected among first-year, second-year, third-year, and experienced business and distributive education teachers on the seven categories of concern—human relations, classroom management and routines, instructional activities and methods, personal concerns, conditions of work, evaluation problems, and professional growth. They reported that the highest five concerns of all business and distributive education teachers were opportunities for advancement, opportunities to observe other teachers, opportunities to participate in democratic decision making on school policies and practice, demands on time, and salary. Among the conclusions put forward by Underwood and Davis (1985) was that business and distributive education teachers were more concerned with professional growth and personal concerns and less concerned with classroom and pedagogical issues. The results of this study are generally consistent with the work of Underwood and Davis (1985) in that there were no significant differences between beginning and experienced traditionally certified marketing teachers on any of the seven categories of concern. There were, however, significant differences between beginning and experienced alternatively certified marketing teachers on three of the seven factors—classroom management and routines, personal concerns, and professional growth which is inconsistent with the findings of Underwood and Davis (1985). The results of the present study are also consistent with the work of Underwood and Davis (1985) in that the category of professional growth was among the areas of most concern.

Most recently, the concerns of prospective and experienced business and marketing teachers were examined by Alexander et al. (1997a). In their study, Alexander et al. (1997a) reported that the items of most concern to prospective business and marketing education teacher were having enough school time for planning and preparing, acquiring up-to-date equipment, handling controversial subjects, having enough equipment for effective instruction, and handling problems of student control and discipline. By comparison, the items of most concern to experienced teachers were opportunities to observe other teachers, opportunities for advancement, demands on time, having enough school time for planning and preparing, and developing good work and study habits in students. Alexander et al. (1997a) concluded that neither prospective nor experienced teachers have crucial concerns about teaching. Further, both prospective and experienced teachers are concerned with demands on time, experienced teachers had more serious concerns than did prospective teachers, and prospective and experienced teachers have different concerns. The results of the present study are consistent with the Alexander et al. (1997a) study in that both beginning and experienced traditionally certified and beginning and experienced alternatively certified marketing teachers do not experience major levels of concern with most aspects of their jobs. Further, items of most concern in the Alexander et al. (1997a) study such as demands on time and developing good work and study habits in students were also among the items of most concern to all four groups of teachers in the current study.

Implications

Given the above discussion, the following implications for practice are offered. Finding that there are significant differences between beginning and experienced traditionally certified marketing teachers and beginning and experienced alternatively certified marketing teachers may be of little practical consequence due to the relatively low level of concern expressed by all four groups on most items of the teacher concerns survey. What is important is that both traditionally and alternatively certified marketing teachers report relatively low levels of concern with most of the items. The realization that marketing teachers as a whole share the same low levels of concern has very positive consequences. Marketing teachers expressing low levels of concern lend stability to the schools in which they teach through greater commitment. This greater commitment may translates into an environment more conducive to student learning.

While generally low levels of concern were reported for most items on the teacher concerns survey, it may be necessary for state department of education personnel and marketing teacher educators to address the items of most concern to beginning and experienced traditionally certified and beginning and experienced alternatively certified teachers in both preservice or inservice marketing teacher education. For example, among the top concerns for all four groups of marketing teachers in the current study was demands on time. Perhaps a unit on time management for teachers conducted as part of a preservice methods course would be useful in helping marketing teachers better manage the time that they do have. Further, developing good work and study habits in students was among the top concerns of all four groups of teachers in this study. Including a section on student motivation and study skills development my be appropriate for a regional inservice activity. Regardless of the concern or strategy, state department of education personnel and marketing teacher educators need to address the areas of most concern as identified by teachers.

Plainly, an assessment of the concerns of beginning and experienced traditionally certified and beginning and experienced alternatively certified marketing teachers is very important to state department of education personnel and teacher educators involved in fostering their professional development. Keeping versed of the concerns of both beginning and experienced traditionally certified and beginning and experienced alternatively certified marketing teachers within the various aspects of their jobs will enable state department of education personnel and marketing teacher educators to guard against potential problems or to rectify those that already exist by redesigning preservice and inservice education to the identified concerns.

Recommendations for Further Research

Based on the review of the literature and the analysis of the data, the following recommendations for further research are offered:

1. A replication of this study should be conducted at regularly scheduled intervals to determine if the concerns of beginning and experienced traditionally certified and beginning and experienced alternatively certified marketing teachers change over time. A study of this nature would be useful in identifying changes in concerns that develop in response to evolving issues impacting both schools and teaching. By keeping a pulse on the changes that occur over time, both state department of education personnel and marketing teacher educators could address problems and areas of concern through preservice and inservice education.

2. A study should be conducted that examines beginning and experienced traditionally certified and beginning and experienced alternatively certified marketing teachers in regard to specific program expectations or standards. All the studies conducted to date have been of generic teacher related concerns. A study of program specific expectations or standards would identify areas of concern that should be addressed by state department of education personnel and marketing teacher educators in both preservice and inservice education.

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Technology and Workplace Skills Needed for Entry-Level Employment in the 21st Century Workplace: A Preliminary Investigation

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Abstract

As business educators continue their effort to align curriculum with the needs of business/industry, the SCANS competencies and NBEA standards should be re-examined in order to determine their importance for entry-level workers as we approach the 21st century. A survey was sent to the top one hundred Fortune 500 companies to determine the perceived importance of specific technology skills as well as the importance of the SCANS competencies and NBEA standards. Preliminary results suggest that the competencies are valid today.

Introduction

In an effort to explain the importance of computer skills to her eighth-grade students, a local middle school computer teacher developed a research activity using a survey compiled by the class. This survey was designed to identify the basic computer skills used by entry-level employees of businesses within a 45-mile radius of the school district. The students were quite surprised to find that computer skills were expected of all entry-level positions. These skills included word processing, spreadsheet, database, e-mail, and Internet. A few respondents also identified web page design as an entry-level requirement.

The findings of this study led to a discussion between the authors of this paper pertaining to the needs of entry-level employees across the nation. As business educators, are we equipping our students with the necessary skills to obtain entry-level positions in the 21st century workforce?

Business educators have looked to the U.S. Department of Labor's Secretary's Commission on Achieving Necessary Skills (SCANS) report [1992] and the National Business Education Association's (1995) *National Standards for Business Education - What America's Students Should Know and Be Able To Do In Business* as benchmarks for developing and aligning business curriculum to meet the needs of industry. In surveying classified advertisements for entry-level positions, North & Worth (1997) determined that the technology skills identified by the SCANS report were still being requested by employers. Perry (1998) reported that a group of employers in 420 Southeastern cities strongly believed that computer skills (including operating systems, graphical user interface, word processing, spreadsheet, and database) were essential for their employees. The survey respondents were from a variety of industry types, and the majority were from organizations with fewer than 500 employees.

The Foundation Skills and Workplace Competencies of the SCANS report are also addressed by NBEA's *National Standards for Business Education - What America's Students Should Know and Be Able To Do In Business*. Floyd & Gordon (1998) examined the skills needed for entry-level management graduates. Employers reported that problem-solving skills were "... more important than communication skills, work experience, and interpersonal skills, respectively." (Floyd & Gordon, 1998, p. 107) Employers indicated a preference for written communication skills over oral communication skills. Peel, Joyner, & Volk (1998) identified listening and giving clear directions as skills necessary for high school graduates seeking employment in North Carolina firms. Critical thinking skills, group interaction skills, and personal development skills were also found to be important by these employers. North & Worth (1997) reported that the interpersonal skills listed in the SCANS report were not specifically requested in the group of classified advertisements they reviewed. However, they explained that these skills were most likely expected of entry-level employees.

Purpose of the Study

Business education students receiving adequate training will obtain position in the 21st century workplace. In order to design an up-to-date business curriculum, business educators must determine the needs of industry today. This study will answer the following questions:

1. What technology skills are needed for entry-level employees currently obtaining positions?

2. What workplace skills and competencies as identified by the SCANS report are necessary for entry-level employees obtaining positions?

3. Are the workplace skills and competencies listed in the SCANS report as important today as they were in 1992?

Methodology

An initial survey was mailed to personnel directors of the top 100 companies listed in Fortune 500. The contact information was obtained from the Fortune 500 website (http://www.pathfinder.com/fortune/fortune500/500list.html). This survey includes 21 questions concerning specific technology used in the businesses as well as the workplace skills identified by the SCANS report. Responses were to be returned by mail, fax, or e-mail. Follow-up letters and fax messages were sent four weeks after the initial mailing.

Preliminary Findings

The study is presently in the data collection stage (actual numbers and percentages will be presented at the 1999 DPE National Research Conference). The findings presented in this section are from preliminary survey data. The findings will be presented in the following categories: technology skills and usage, communication skills and usage, basic skills, and workplace competencies.

Technology

A majority of respondents require a minimum level of computer skills for employment. Of these skills, applying technology to the task is required by all respondents. Word processing, spreadsheet, and database software usage was reported by all respondents. Desktop publishing, presentation, and communication software was reported as the next highest category of usage. The Microsoft Office Suite was used by most all respondents. All respondents reported using e-mail for communication within the organization. Various communication software (including Microsoft Exchange, Microsoft Outlook, and Lotus Notes) was also reported as used by these organizations. Each company reported maintaining a web page. The development/maintenance of these web pages is the responsibility of in-house employees in most all of the organizations reporting.

The main users of computers were reported as administrative and office personnel within these companies. Sales personnel, utility workers, midlevel, and all employees were also reported as main users. All respondents reported that they provide inhouse and outside training for their employees.

Communications

Approximately one-half of the respondents reported that entry-level employees perform written communications tasks. The examples listed by the respondents included reports, e-mail communication, and producing documents. One respondent reported uncertainty as to the usage of written communication within his/her organization.

All respondents reported that entry-level employees perform oral communications tasks. The examples listed by the respondents included presentations, meetings, customer service, answering the telephone, sales promotions, and staff meetings.

Basic Skills

All respondents reported reading and arithmetic/math skills as important. Listening skills were not reported as important as the other two basic skills.

Workplace Skills

Problem-solving skills were reported as a required skill by all respondents. Knowing how to learn and reasoning were the skills required by most all respondents followed by creative thinking and decision making. None of the respondents reported seeing things in the mind's eye as a required skill.

Responsibility and integrity/honesty were reported as necessary by all respondents. Self-esteem, sociability, and self-management were considered necessary by most respondents.

Time management was the resource competency considered necessary by all respondents. Material/facilities management and money/budgeting skills were reported as necessary by approximately one-half of the respondents. Few respondents considered human resource management as a necessary skill.

Team skills, serving clients/customers, and working with diversity were reported by all respondents as the necessary interpersonal skills for entry-level employees. Leadership skills were considered necessary by approximately one-half of the respondents. Teaching/mentoring skills and negotiation skills were reported as necessary by only a few respondents.

The four information competencies identified by the SCANS report were identified as necessary for entry-level employees. The four competencies are: (1) acquires and evaluates information, (2) organizes and maintains information, (3) interprets and communicates information, and (4) uses computers to process information.

Most respondents reported one of the three SCANS systems competencies as necessary for entry-level employment (understands social, organizational, and technological systems). Less than one-half considered the remaining two competencies as necessary (monitors/corrects performance of systems and improves or designs systems).

Conclusions

This study is limited by the fact that the initial surveys were sent to the top one hundred Fortune 500 companies. The addresses obtained were for the company headquarters, and these addresses were not always the correct address for the human resources department. Presently, the data collection process continues as the appropriate human resource department contact information is found.

According to this study's preliminary findings, the SCANS competencies and NBEA's business education standards are still valid. As further data is collected, discrepancies may be identified. Business educators need to not only look to Fortune 500 companies for the skills needed for entry-level employment, but they should also contact the industries within their employment areas. These contacts are necessary in order to align curriculum to meet the needs of employers in the 21st century workplace.

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Training Needs of State Government Secretarial Employees: Implications for Business Education and Training and Development

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Abstract

This paper reports on a study of a large-scale, state-wide training needs assessment of office support/clerical employees in Louisiana state government. To identify the "felt" training needs, 11,016 surveys were distributed in a single mailing resulting in a return of 7,117 completed questionnaires, a 65 % response rate. The focus of this paper is on the training needs of secretaries, one of the eight job clusters surveyed. The paper also focuses on the methodology, survey instrument development and administration, and how the resulting data were tabulated and analyzed.

Introduction

Technological advances, globalization, and other workplace factors has placed an increased need for more competent and skilled employees in both business/industry and state government. Numerous studies have been conducted that assessed the training needs of, competencies required by, and tasks performed by office workers in business and industry, but little has been done to examine the training needs of government office employees on a large scale (Alexander, 1996; Arney, 1998; Chalupa, 1997; Davis, 1991; Davis, 1992; Davis & Chaney, 1993; Marino, 1993; McEwen, 1997; Norback, 1995; Zhao, 1996).

Employees of the State of Louisiana are emerging from a long period during which little funding was available for employee training. A new state administration has recognized the strategic value of well-developed human resources. In 1997, the governor of Louisiana established workforce development as one of the priorities for his administration. To achieve this objective, several groups were established: the Workforce Commission within the Governor's office, a Task Force on Post-Secondary Technical and Adult Education, and the Occupational and Training Information System in the Louisiana State Department of Labor. The mission of the Occupational and Training Information Systems is to collect workforce data for the Workforce Commission to use in setting priorities and funding decisions on training programs.

The first step required in any effective training intervention is a thorough and systematic assessment of workforce training needs. Successful needs assessments provide the basis for establishing the performance improvement value of subsequent training. Because of the highly varied nature of agencies and units in state government and the large volume of needs assessments that have to be conducted, Louisiana State University was contracted to assist in assessing and prioritizing training needs. During the initial funding period (the first six months), this needs assessment project consisted of two phases. Phase I was to identify the current training needs of approximately 12,000 incumbent office support/clerical employees within the state civil service system for all departments and agencies throughout the entire state. Phase II was to develop a method for conducting needs assessment for all employees within a state department and to pilot this methodology with two departments. The second period of funding (a two-year period) is a continuation of Phase II which involves identifying the performance training needs of Louisiana state government employees for individual departments based on the methodology developed during the pilot study.

The focus of this paper will be on the large-scale training needs of state government office support/clerical workers that was conducted during Phase I of the initial funding period. The paper will cover the objectives of Phase I, the methodology employed to accommodate those objectives, including how the survey instrument was developed and administered, how the resulting data was tabulated and analyzed, and findings and recommendations. The paper will also explore the implication Business Education as well as Human Resources Development (HRD) training in government and business/industry.

Review of Related Literature

Since the literature on the training needs of government office workers is limited, the review of literature used for this study was related to the research conducted in business and industry. Two research areas were reviewed in preparation of conducting this wide-scale needs assessment of state office support/clerical government employees: training needs assessment of office workers and job competencies required of office workers in business and industry.

Training Needs of Office Workers

For the purpose of determining the types and areas of training that may be needed by office worker several studies conducted in business and industry was examined. Davis (1992) surveyed trainers who were members of the Secretarial/Clerical Trainers Network of the American Society for Training and Development (ASTD) to determine their perceptions of what specific content areas should be emphasized by educators in secondary and post-secondary office system curricula. The trainers recommended that office systems educators continue to emphasize communication skills, human relations skills, and personal characteristics. The findings from Davis' (1992) study indicated a need to shift the training emphasis in traditional office support skills and in computer/technology skills, e.g.: more emphasis on computer/technology related application skills rather than on the understanding of the concepts and terminology, more on telephone techniques than on transcription of dictation, more on transcription from machine dictation than from shorthand notes, and more on keyboarding accuracy than on speed.

In a survey of in-house training programs for office staff, Davis (1991) found that a majority of companies were providing training in the following areas: word processing, time management, telephone techniques, written and oral communications, listening skills, spreadsheets, introduction to computers, managing stress, teamwork, supervisory skills, and databases. The implications for office systems curricula is that the following content areas be emphasized: communications skills, human relations skills, personal characteristics, traditional office skills, computer applications, problem-solving and decision-making skills, leadership skills, and computer terminology.

Job Competencies

Technology skills. Another study that examined the perception of training professionals in business and industry was conducted by Arney (1998), where human resource managers in the top 100 public businesses headquartered in Indiana were surveyed to determine the importance placed on different computer skills. The perceptions of these human resource managers were compared to the perceptions of faculty from colleges and universities in Indiana offering a baccalaureate degree in business administration. Both groups agreed that the use of word processing and spreadsheet software were the most important computer application skills for the business administrative graduate to possess. They also rated highly the need to understand the role of the computer as an aid in solving problems. Universities placed a higher value on the ability to use the Internet than did business and industry. Both groups agreed that desktop publishing software should be de-emphasized.

A study of Fortune 500 human resource executives conducted by Zhao (1996) recommended that business students possess computer end-user skills in each of the following areas: computer hardware, operating systems, word processing, spreadsheet, database, desktop publishing, programming in word processing, telecommunications and groupware. The following 11 specific computer end-user skills were highly recommend: "using keyboard, microcomputer, mouse, printer, Windows, Excel, e-mail, Internet, and LAN, downloading files, and finding information" (Zhao, 1996, p. 164).

In a survey of 408 administrative support personnel working in New York City, Marino (1993) found that a large percentage of the respondents (secretaries, executive secretaries, administrative secretaries, or administrative assistants who use information technologies) felt they were proficient only in using word processing software, printers, copiers, and facsimile equipment. Chalupa (1997) examined the presentation software usage in the workplace and found that PowerPoint in the Windows environment was the most popular followed by Harvard Graphics.

Nontechnical competencies. According to Luft and Schoen (1986), employee success depends on both technical and nontechical business competencies. Luft and Schoen grouped nontechnical skills as problem solving, stress management, professional characteristics, communication skills, and human relations principles. Illinois employers in Luft and Schoel's (1986) survey placed minimal emphasis on stress-related competencies.

In a study to determine the secretary's role in training co-workers in computer technologies, Alexander (1996) surveyed members of Professional Secretaries International (PSI). Respondents overwhelmingly recommended that instruction on "how to train others" be added to the office curricula. In another study of Professional Secretaries International, Burkhalter, Scebra, and Deaton (1986) found that all secretaries use most time management principles to some extent. Therefore, it was recommended that business educators continue to teach time management principles.

The focus of these studies and of the present study is the identification of those types of training and skills that are important to office workers in performing their jobs more efficiently and effectively. The cumulative impact of these research efforts will be in the structure and content of curricula for trainers in government, business, and industry and for educators in secondary and post-secondary business education programs. Because of the rapid changes occurring in the workplace, it is essential that business trainers and educators provide well-rounded curricula that will enable students to perform effectively in all aspects of employment.

Phase I Objectives

The objective of Phase I of the Louisiana State Needs Assessment Project was to conduct a needs assessment to identify current training needs for office support/clerical employees within the state civil service system. The specific objectives were to identify the training needs of office support/clerical employees: (1) for all office support/clerical employees, (2) by job clusters, (3) for each state department, and (4) for each agency within the departments. This research paper will focus on the training needs of the Secretarial job clusters and will explore the implication for Business/ Office Education as well as Human Resource Development (HRD) training in government and business/ industry.

Methodology

Instrumentation

As a first step in the design and implementation of a training needs assessment program, it is essential to properly appreciate and understand the scope of the problem that was addressed. To this end, a preliminary series of meetings were held between the Phase I Project Coordinator and various State officials that were identified by the Director of the Comprehensive Public Training Program (CPTP), Division of Administration. These meetings were instrumental in exposing the complexity of job titles, job descriptions, GS levels, and other intricacies of the State Civil Service System. Furthermore, they helped form a foundation upon which the task of identifying office worker classifications that should be surveyed for possible training needs. The overall process required an examination of specifications for office/clerical job titles associated with series 4000 registers (no typing test required of applicant) and with series 4002 registers (typing test required of applicant). Ultimately, 45 job titles were selected for the training needs assessment survey of office support/clerical employees. Based on job descriptions and GS levels, these 45 job titles selected were subsequently grouped into the following seven clusters: Accounting, Administrative, Office Management, Clerical, Secretarial, Transcription, Word Processor, and University Admission.

The next step involved identification of the appropriate content of the survey instrument. Focus groups were employed to determine important areas for inclusion in the training assessment study; a total of eleven focus group meetings were conducted. These focus groups consisted of State office/clerical workers representing multiple State agencies and encompassing a wide range of job titles. As a result of the 11 focus group meetings, it was discovered that there was considerable commonality of identified training needs across the groups. Therefore, it was decided that a single questionnaire should be developed. Also, it was anticipated that having one questionnaire would reduce the complexity of managing the distribution, collection, and tabulation of multiple versions of the instrument across the various State government departments and groups of office workers.

Based on the information obtained from the focus groups, a draft of the questionnaire was developed. A panel of experts was employed to review the questionnaire for content and design.
A field testing of the survey instrument was conducted with 16 office/clerical workers from the Department of Environmental Quality (DEQ), representing a wide range of job titles and various agencies within DEQ. The volunteers were asked to provide any suggestions or recommendations that would improve the instruments, to check to wording of the items, to make sure the directions were clear and understandable, and to keep track of their time in order to estimate how long it would take the typical respondent to complete the questionnaire. The average time to complete the survey instrument was 15 to 20 minutes.

The final draft of the survey instrument contained a total of 67 items covering nine training topic areas, 3 questions dealing with computer and related technology, space for writing open-ended recommendations and comments, and a section on demographics. The nine topic areas consisted of oral communication, written communication, files/filing, general skills, human skills, personnel issues, understanding general state procedures, understanding your department/agency, and work management skills. For each of the 67 training topics listed, the respondents were asked to use the following scale to indicate how much their job performance would improve if they were to be provided training in the topic listed: 1 = None, 2 = A Little, 3 = Somewhat, 4 = A Lot, 5 = A Great Deal, and N = Not Applicable. The frequency response to this scale was employed in the ensuing statistical analysis to provide a ranking of the relative importance of the various training topics addressed.

In addition to the "pure" training topics covered above, the survey instrument included a section on computer and related technology wherein respondents were asked to identify the version of listed software used in performing their job. Further, they were asked to indicate their training needs for basic computer literacy, mainframe, a wide range of application software (e.g. WordPerfect, Lotus, PowerPoint), electronic mail, and the Internet. The respondents were also asked if they would be interested in being trained to be an in-house resource person to help co-workers with computer software/hardware problems. Finally, in the demographic section of the questionnaire, the respondents were asked to identify their job title from among the list of 44 job titles surveyed. Additional questions dealt with work location, number of years spent working for the Louisiana State Government, the number of years in current position, and level of education.

To reduce overall respondent error rate and encoding errors, a scantron sheet format was employed for the four-page survey instrument. The respondents were instructed to use a number two pencil to bubble in their responses. A side benefit of using a scantron sheet format is that the respondents' time to complete the questionnaire would be lessened somewhat, therefore, it was anticipated that they would spend less time away from their job and would be more likely to complete and return the survey.

To ensure anonymity, respondents were asked to identify their department, agency, and work location only. Upon receipt of the completed questionnaire, the CPTP staff assigned the appropriate organization I.D. number to a questionnaire I.D. code sheet. This scantron I.D. code sheet was designed to accompany the questionnaire for the purpose of associating the individual questionnaires with the appropriate organizations.

Administration of the Survey Instrument

The staff at the CPTP distributed the questionnaires to contact persons (human resource director or related person) at 272 State agencies. These contact people then distributed the questionnaires to all their office support/clerical workers. The contact people were asked to return the completed questionnaires within 3 weeks. Of the 11,016 questionnaires distributed statewide, a total of 7,117 completed questionnaires were received. The overall response rate for the State was 65%. For the Secretarial job cluster, 3,217 questionnaires were sent and 2,024 completed instruments were returned, a 62.9% response rate.

Statistical Analysis of Survey Results for the Secretarial Job Cluster

For the Secretarial job cluster, representing eight job titles, statistical analysis software (the SAS System for Windows, Release 6.11) was employed to: (1) tabulate the scale response frequency for each questionnaire training topic; (2) rank order the 67 questionnaire training topics, based on an assigned score which is the percentage of the respondents that rated that item in either of the two categories of highest importance ("A Lot" and "A Great Deal"); (3) frequency and percentage responses for basic and advanced computer training needs, for training as an in-house resource person, and for demographic information.

To recommend training for the 67 topics, the following criteria were used: If the ranked order score received was 60% or higher, then there was a perceived Widespread Need for training related to that item; if the score was between 40% and 59.9%, then there was Selected Group Need; and if the score was below 40%, then there was Individual Employee Need for that training item. For example, a score of 66.3 indicates that 66.3 % of the respondents rated the item either as of "A Great Deal" or "A Lot" with regard to its importance relative to their job performance. Therefore, this training item would be identified as a widespread need for training. For the basic and advanced computer training needs recommendations, the "need basic training" and the "need more advance training" response categories were reported separately in rank order with the highest need listed first.

Due to the comprehensiveness and large scale nature of this statewide training needs assessment of office support/clerical employees, the survey findings were delivered to CPTP in the following formats: (1) Global responses, based on all 7,117 completed questionnaires received; (2) Per job cluster, based on the eight different groups of job titles; and (3) For each of the 272 State organizations as identified by organizational I.D. number. The information provided in the first two formats was for use by CPTP in planning statewide and/or multi-agencies training. The third format was provided to each of the 272 agencies/organizations with a guide/key for interpreting the results.

Findings and Recommendations

Response Rate

Of the 11,016 questionnaires sent statewide on May 19, 1997, a total of 7,117 completed questionnaires was received. The overall response rate for the State was 65%. For the secretarial cluster of job titles, 3,217 questionnaires were mailed and 2,024 completed instruments were returned, a 62.9 % response rate. There are eight job titles within the secretarial job cluster. The number of questionnaires received and response rate per job title are listed in Table 1.

Training Topics

Findings based on the ranking of an assigned score derived from responses to the 67 questionnaire items dealing with training topics are presented below for the secretarial cluster of job titles. Employing the criteria detailed above, none of the training topics had been identified as *Widespread Need*, 13 training topic have been classified as *Selected Group Need* and 54 training topics have been termed as *Individual Employee Need*. This classification of the training items is based on an assigned score (% A Lot/ A Great Deal), rank, and the number of not applicable (N/A) responses for each questionnaire item. The rank order of the item is based on the percentage of responses received as "A Lot" and "A Great Deal." For example Rank 1 received the highest rating and Rank 67 the lowest rating of importance.

Selected group need. Thirteen training topics received assigned scores ranging from 40.1 % to 56.1 % (rank 13 to 1 respectively), indicating that there is a need to provide training in these areas to select groups of employees. The top 2 of these 13 topics received assigned scores ranging from 52 % to 56.1%. It was recommended that training on these top two topics (listed in rank order in Table 2) be provided to appropriate employee groups.

The remaining 11 of these 13 items identified for selected group training received assigned scores ranging from 40.1 % to 48.2 %, and are indicated in Table 3 according to their topic area. These 11 topics fell under the following topic areas: written communication (2 items), files/filing (1 item), general skills (2 items), human skills (3 items), personnel issues (2 item), and work management skills (4 items).

These 11 training topics were indicated to be important for job performance according to 40 to 48 % of the 2,024 respondents. The number of topics appears to be somewhat high, therefore, it was recommended that training in these areas may need to be considered in terms of the importance to the individual agency or department.

Individual employee need. Fifty-four training topics received lower assigned scores ranging from 10.8% to 39.2 % (rank 67 to 14 respectively), indicating that there may be a need to provide training to individual employees. The number of topics appears to be excessive, therefore, it was recommended that requests for training on these topics not be done across the various state organizations for the secretarial group of office workers, but that the training recommendations come from the individual organizations (agency/department). Training topics were found in all nine training topic areas. (See Table 4.)

Table 1
Response Rate Per Job Title

Job Title	Number of Questionnaires Sent	Number of Responses Received	Percent Received
Administrative Secretary	928	592	63.8 %
Administrative Services Assistant/ Secretary	180	133	73.9 %
Legal Secretary 1	75	40	53.4 %
Legal Secretary 2	35	27	77.1 %
Medical Secretary	5	30*	600.0%*
Rehabilitation Secretary	67	52	77.6 %
Secretary 1	502	287	57.2 %
Secretary 2	1,425	863	60.6 %
TOTALS	3,217	2,024	62.9 %

- Because some respondents gave working title as opposed to Civil Service job titles, there are some categories where there appears to be more returned questionnaires than were sent.

Table 2
The Top Two Selected Group Training Needs Identified (52 % to 56.1 %)

Rank	Training Topic	Topic Area
1	Stress management/stress relief (56.1 %)	Human Skills
3	General knowledge of Civil Service Rules (52 %)	Personnel Issues

Table 3
The Remaining 11 Needs Identified for Selected Group Training (40.1 % to 48.2 %)

Topic Area	Training Topic	Rank Order Score
Written Communication	Writing Skills for letters, memos, technical reports, etc.	48.2%
	Grammar/punctuation / Business English / proofreading skills	47.0%
Files/Filing	Computer filing systems	47.9%
General Skills	Understanding Louisiana state government	42.5%
	How to write a procedures manual for your job	40.3%
Human Skills	Dealing with difficult people who are co-workers, supervisors, and subordinates	48.1%
	Dealing with difficult members of the public	41.4%
	Conflict resolution with co-workers, superiors, and subordinates	40.6%
Personnel Issues	How to prepare and evaluate a job description	46.3%
	Civil service policies related to leave balances	40.1%
Work Management Skills	Decision making skills	40.9%

Table 4
Training Topics (47) Identified for Individual Training Needs (16.4 % to 39.6%)

Topic Area	Training Topic	Rank Order Score
Oral Communication	Communicating with the public	29.8 %
	Client/customer interview skills	26.5 %
	Receiving, giving, and following instructions/directions	25.5 %
	Effectively use voice mail	24.8 %
	Telephone etiquette	19.9 %
Written Communication	Format for business documents	37.6 %
	Using directories (e.g., zip codes, etc.)	15.1 %
Files/Filing	Confidentiality / record retention / archive policies, and procedures	36.4 %
	Filing and record keeping procedures	28.0 %
General Skills	Confidentiality laws	36.0 %
	Skills for providing on-the-job training/instruction to others	34.9 %
	Preparing for meetings (e.g. researching information, preparing charts/tables, etc.)	34.0 %
	Use of office equipment	24.1 %
	Basic accounting/bookkeeping	22.5 %
	Reading improvement	20.9 %
	Using math in your job	18.7 %
	Typing/keyboarding	18.3 %
	Proper office/business dress	10.8 %
Human Skills	Dealing with irate telephone calls	39.2 %
	Making the workplace a more professional environment	36.1 %
	Counseling skills	35.0 %
	Teamwork	33.1 %
	Providing information to the public including the media	31.6 %
	Customer service	21.7 %
Personnel Issues	Preparing policies, procedures, and rules	33.5 %
	Equal Employment Opportunity Law	32.1 %
	When and how to take disciplinary actions	31.6 %
	State policy on violence in the workplace	29.8 %
	Sexual Harassment Law	29.0 %
	How to work with people with disabilities	26.5 %
	Job interviewing techniques for hiring new employees	26.1 %
Understanding General State Procedures	State travel policies/procedures	34.8 %
	Purchasing procedures	34.2 %
	Civil Service forms	32.6 %
	State inventory procedures/policies	27.5 %
	State vehicles policies/procedures	24.8 %
	Rental and leases procedures	23.1 %
	Mail procedures	18.8 %
Understanding Department/ Agency	Cross training to fill in for other employees in your department	36.5%
	Laws governing department's release of information	34.4 %
	Departmental laws, policies, and procedures	32.5 %
	Department emergency procedures	32.1 %
	General responsibilities of other in department	30.1 %
	Departmental specialized terminology	29.7 %
	General workflow within department	28.4 %
	Departmental payroll procedures	28.1 %
	General organizational structure/chart for department	26.1 %
	Departmental routing/distribution of documents	25.6 %
Work Management Skills	How to handle multiple tasks	36.8 %
	How to locate and retrieve information	36.5 %
	Goal Setting	35.3 %
	Prioritizing task	35.3 %
	Dealing with deadlines	34.8 %
	Following up on tasks and pending files	34.4 %

Software usage. The respondents were asked to indicate what **version of software** they were using in their job. The original Windows (3.1 or 3.11) version of WordPerfect took the lead in software usage followed by the Windows 95 version of WordPerfect. The third ranked software used was the DOS version of WordPerfect. Therefore, it was recommended that all versions of WordPerfect be considered for computer training where appropriate.

Computer training needs. The respondents were also asked to indicate what computer training they felt was needed in order to perform their job more effectively on two levels: basic training and more advanced training. The respondents in the secretarial job cluster ranked Internet training as their number one **basic computer training need** (48.5%). Between 32.9 % and 39.3 % of the 2,024 respondents indicated a felt need for training in the following areas in descending order: Windows 95, Microsoft Access, PowerPoint, Excel Spreadsheet, Lotus Notes, Lotus Spreadsheet, Harvard Graphics, e-mail, Microsoft Word, and dBase. (See Table 6.) It appears that a significant number of office workers felt they could benefit from training in these computer areas. Approximately one-fourth of the respondents felt there is a need for basic training in DOS, Grammar Checker, and departmental mainframe. For the remaining software training topics, the respondents as a whole placed little need for basic training in basic computer literacy (13.4 %) and WordPerfect (9.6 %), which may indicate that most of the secretaries felt they had proficient skills in these areas.

For the area of **more advanced computer training**, only one topic was ranked considerably higher than the other topics—WordPerfect (43.4 %). Between 22.5 % and 25.8 % of the secretarial employees expressed a need for advanced training in Windows 95, basic computer literacy, e-mail, and Internet. For this job cluster of secretarial office workers, the following advanced computer training topics did not appear to be critical to these employees, as a whole, in performing their job: Grammar Checker, Lotus Notes, Microsoft Access, PowerPoint, and Harvard Graphics.

Table 5
Software Usage

Software	DOS	Original Windows	Windows 95
WordPerfect	22.0 %	33.4 %	28.8 %
Microsoft Word	2.0 %	9.9 %	19.4 %
Lotus Spreadsheet	7.3 %	9.0 %	7.6 %
Excel Spreadsheet	.8 %	5.7 %	10.1 %
dBase	10.0 %	2.6 %	2.4 %
Microsoft Access	.6 %	4.6 %	9.1 %
Harvard Graphics	2.9 %	1.9 %	1.9 %
PowerPoint	.1 %	3.0 %	8.1 %

Table 6
Basic Computer Training Needs

Rank	Training	Percent	Rank	Training	Percent
1	Internet	48.5 %	9	E-mail	34.0 %
2	Windows95	39.3 %	10	Microsoft Word	33.7 %
3	Microsoft Access	39.2 %	11	dBase	32.9 %
4	PowerPoint	37.5 %	12	DOS	27.7 %
5	Excel Spreadsheet	37.4 %	13	Grammar Checker	26.9 %
6	Lotus Notes	37.4 %	14	Your department mainframe	25.5 %
7	Lotus Spreadsheet	37.3 %	15	Basic computer literacy	13.4 %
8	Harvard Graphics	36.8 %	16	WordPerfect	9.6 %

Table 7
More Advanced Computer Training Needs

Rank	Training	Percent	Rank	Training	Percent
1	WordPerfect	43.4 %	9	Lotus Spreadsheet	15.1 %
2	Windows 95	25.8 %	10	Excel Spreadsheet	11.8 %
3	Basic computer literacy	25.1 %	11	dBase	10.5 %
4	E-mail	24.6 %	12	Grammar Checker	8.8 %
5	Internet	22.5 %	13	Lotus Notes	8.3 %
6	Microsoft Word	18.9 %	14	Microsoft Access	8.0 %
7	Your department mainframe	18.2 %	15	PowerPoint	6.2 %
8	DOS	15.8 %	16	Harvard Graphics	5.9 %

It is interesting to note that the survey revealed that many employees were still using DOS and original versions of Windows. Because these technologies are changing so rapidly and the fact that State government is committed to upgrading technologically, it was recommended that computer training needs be assessed more frequently.

In-house trainers. To determine whether any of the secretarial office workers would like to be trained as an in-house resource person helping co-workers with computer software/ hardware problems, a question to this effect was included in the survey instrument. Over a third (36.3 %) indicated that they would like to receive this type of training and over a fourth (26.0 %) indicated that there was already someone trained in their department. Approximately another third (37.7 %) of the respondents were not interested. It was highly recommended that this type of training be offered to those secretarial employees who are willing to assist their co-workers with computer-related problems.

Conclusions, Implications, and Recommendations

The findings of this study are generally supported by the review of literature, with the exception of stress management. In this study, stress management was ranked first as a training need for the secretarial job cluster, whereas business and industry employers in Luft and Schoel's (1986) survey placed minimal emphasis to stress-related competencies. Factors that may contribute to this difference in findings are: employee's versus employer's perception, public versus private job sector, and the time lapse between the two studies.

The approach utilized and the unique problems encountered in this study of an unusually large-scale needs assessment of office workers may be useful to other organizations in their move to performance driven human resource development. Examples of the unique problems associated were:

1. ALL employees throughout the entire state were to be given the opportunity for input;
2. 45 different job titles and civil service job descriptions were to be included;
3. The reading levels of the office support staff had to be considered;
4. Political implications, e.g., all state government departments throughout the entire state had to be included in the study; and
5. This statewide needs assessment had to be conducted within a six-month period.

Implications for governmental training. Effective performance related need-assessments should to be linked to multidimensional strategies that include both top-down and bottom-up approaches to collecting information. The wide-scale survey used in this study did offer an efficient means for surveying an extremely large number of employees in a short period of time. According to Holton (1995), large-scale "felt needs" training assessment can be effective at boosting morale, but may have minimal success in improving performance. Therefore, the results from a large-scale felt needs survey should not be the only source used for identifying performance improvement training.

Implications for business and office education are based on the study findings for the secretarial job cluster of government office workers. Listed below are suggestions for the business and office curriculum at both the secondary and post-secondary levels.

1. **Human relations skills** should be a top priority, especially in the area of stress management, conflict resolution, and dealing with difficult people who may be co-workers or members of the public. Curriculum attention should be given to developing current and future employees' teamwork skills, counseling skills, customer service skills, techniques for providing information to the public, and professionalism.
2. **Oral and written communication skills** should also continued to be emphasized. Business correspondence skills

for writing letters, memos, technical reports along with grammar, punctuation, Business English, and proofreading skills are essential skills for secretarial employees. Providing students with the ability to write one's own job procedures manual is also considered an important skill. Practice/drills should be provided in the office curriculum that reinforces the academic skill of receiving, giving, and following both oral and written instruction. Oral communication training should involve telephone etiquette and the proper procedure for voice mail.

3. **Interviewing Skills** needs to expand beyond the skills used for obtaining a job to interview skills that involve interviewing/hiring employees and interviewing clients/customers in order to better serve the client/customers' needs.

3. **Filing** procedures should include computer filing systems, as well as basic filing and record keeping procedures. Filing training should also include confidentiality, record retention, and archive policies/procedures.

4. **Work management skills** should cover: decision making skills, how to handle multi-tasks, how to locate and retrieve information, goal setting, prioritizing tasks, dealing with deadlines, and following up on tasks and pending files.

5. Because **training** and continuous **retraining** has become a way of life in office occupations, it important that students are prepared for this role. The findings from this study stressed the need for the following types of skills: providing training/instruction to others, cross training to fill in for other employees, how to write a procedures manual for one's job, and serving as an in-house computer/software trainer.

6. **General office/business skills** should include the ability to understand organizational structure/chart, general workflow patterns, responsibility, confidentiality laws, proper office/business dress, general emergency procedures, purchasing and inventory procedures, travel procedures, mail procedures, and payroll procedures. Training topics in the area of personnel issues should include a general understanding or awareness of Civil Service as type of employment system, Equal Employment Opportunity Law, Sexual Harassment Law, disciplinary actions, violence in the workplace, working with people who have disabilities, and the importance of policies, procedures, and rules.

7. **Basic skills** should include reading, business-related math, grammar, punctuation, Business English, proofreading skills, keyboarding, formatting, use of office equipment, basic accounting/bookkeeping, and specialized terminology.

8. **Computer/software training** should continue to be a significant component in the curriculum. Computer skills should include basic computer literary, a general understanding of computer mainframes, the Internet, e-mail, and Windows. Software training need to include word processing, spreadsheet, data bases, presentation software, and grammar checkers. For students/employees wanting advanced software skills, curriculum should provide advanced training in the following: word processing, computer literacy, e-mail, and the Internet. Because technology is changing so rapidly, the emphasis should continue to be on transferability of computer/software skills in order for students to have the skills and confidence to transfer their knowledge and skills to new technology.

9. For the more advanced student, it is highly recommended that curriculum consideration be given to training students as **in-house computer/software trainers** who would assist their future co-workers with computer-related problems.

Recommendations for Future Research. Based on the findings from this study, the following recommendations for further research are suggested: (1) Determine whether the type and amount of prior occupational training influences state government office employees' need for training. (2) Identify the most appropriate training delivery system for state government office employees.

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PART II

REFEREED ACTION RESEARCH AND CLASSROOM APPLICATION PAPERS

Challenges and Opportunities Associated with Internet-Based Instruction in Business Education Classrooms

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Abstract

Internet instruction provides both teachers and students with a number of opportunities including increased flexibility, class interaction, access, online resources, and ease of updating established course web sites. The most commonly reported challenges of Internet instruction are student access to technology, reliance on student initiative, student assessment, course development time, course appropriateness, and copyright issues. A discussion of these challenges and opportunities is presented.

Introduction

Few people would have ever guessed that the Internet technology conceived during the dark days of World War II and fostered by the political pressures of the Cold War (Diamond & Bates, 1995) would become such an important part of life for millions of people around the world during the 21st Century. Indeed, the Internet has so permeated modern culture that routine activities such as applying to college, conducting a bank transaction, finding an apartment, purchasing a product, or communicating with a friend or colleague are but a few of the activities for which it is routinely used. Therefore, it is no surprise that schools are turning to the Internet as a method of instructional support and/or delivery at all levels of education. As is the case with all instructional innovations, a critical element for utilizing the Internet for business education instructional delivery is a thorough understanding of the opportunities and challenges associated with its use.

Opportunities

Internet technology presents a number of opportunities for both teachers and students in the teaching/learning process.

Flexibility

Perhaps one of the most important opportunities associated with Internet instruction is its flexibility. With the Internet as the instructional medium, students are no longer shackled to physically being in room XYZ from 4:00 to 6:45 pm every Thursday night for an entire course. Rather, Internet instruction provides students with the flexibility to view course material at any time and in any place where they have access to a computer with an Internet connection. Further, students are in control of course speed and are able to concentrate on content more applicable to them than would be possible in a traditional classroom setting (Wulf, 1996). In addition to the flexibility provided to students, teachers from distant schools can work together and team teach a course in this virtual instructional environment. Thus, delivering instruction via the Internet provides flexibility and encourages collaboration among teachers that might not otherwise have been viable.

Class Interaction

Through Internet instruction, students and the teacher have the opportunity to communicate asynchronously and/or synchronously via e-mail. Class and teacher interaction and learning on the Internet can take the form of e-mail and electronic discussion groups such as listservs or chat rooms; bulletin boards/newsgroups; downloadable course materials or tutorials; interactive tutorials; real-time, interactive conferencing; and infomatics, the use of online databases (Kerka, 1996). Perhaps the most important consequence of this interaction is that the use of these Internet driven communication tools have been reported to enrich discussion, dialogue, and debate among students and the teacher (Smith, 1996; Sugar & Bonk, 1995).

Access

Reasons for increased access include the Internet's ability to overcome distance, geography, resources, and/or time barriers for both students and teachers (Kerka, 1996; Sugar & Bonk, 1995). By breaking down these barriers, Internet courses hold the promise of increasing student access to educational opportunities that otherwise would not have been possible (Powers & Mitchell, 1997; Smith, 1996). For example, students dispersed over a wide geographic area can make low local enrollment classes more economically feasible for schools and, as a result, more available to students.

Online Resources

Another tremendous opportunity inherent with Internet instruction is the wealth of resources available to students literally at their finger tips. To integrate these Internet resources into a course, a teacher has several options. First, the teacher may search the Internet to find and select materials to support course objectives. Web masters of these sites can then be contacted for permission to create a link from the course web site to the Internet resource. Second, the teacher may allow students the freedom to search the Internet on their own to find useful resources. For students highly proficient at using Internet search and retrieval tools, the freedom to search the Internet for resources is a viable option. Third, and perhaps a more realistic option is to combine the previously mentioned resource integration strategies. With this combined approach, the teacher can search the Internet for useful sites and link them to the course web site and allow students to search the Internet for additional resources on their own. Students are likely to find useful web sites of which the teacher is unaware. These student located sites could them be added to the course web site after appropriate approval has been received.

Ease of Updating

While the time necessary to prepare an Internet course for delivery maybe considerable, updating a course web site is relatively short compared to other instructional delivery options such as revising a CD-ROM (Wulf, 1996). Indeed, updating the course syllabus, revising information pages, and modifying other instructional materials can be done relatively easily both during and after the course. An added benefit of online updating of a course web site is its environmental correctness. In this virtual learning environment, virtually (no pun intended) no natural resources are consumed to make these online changes.

Challenges

Despite the opportunities associated with Internet instruction noted previously, a number of challenges need to be addressed before offering instruction via the Internet.

Student Access to Technology

While the idea of offering courses via the Internet may be well intended, not all students will have ready access to the computer hardware and software needed to complete such a course. Indeed, computer ownership, and perhaps more importantly, modem ownership are related to income. Oppermann (1995) reported that households with incomes exceeding $50,000 were nine times more likely to have a computer equipped with a modem than were households with incomes of $20,000. Thus, it is likely that the students needing the most access to appropriate computer technology may be the ones who are unable to obtain it.

Reliance on Student Initiative

A large portion of the responsibility for learning is shifted to the student in Internet instruction. While the teacher may make suggestions, students have more responsibility in choosing when and what to study and maintain course material for later reflection (Wulf, 1996). This shifting of accountability to the student may cause some problems for teachers depending on how seriously a given group of Internet students take their responsibility.

Student Assessment

A difficult area for any teacher of an Internet course is how to manage student assessment. For instance, how does the teacher know for sure that the student who is enrolled in the course is actually the person completing and submitting the assignments? For Internet courses where there is no face-to-face contact between the students and teacher, it can be problematic for the teacher to verify that students actually did the work or completed the online exams.

Course Development Time

Perhaps one of the biggest challenges that a budding Internet course teacher will face is the long hours it takes to develop a course for Internet delivery. Estimates have been put forward that 30 hours of development time are required to create one hour of instructional time (Carlson, Downs, Repman, & Clark, 1998). Compounding the issue of development time is the rapid pace at which technology is changing. A teacher could put in the long hours to master a web page design program only to find out that there is a newer version already on the market.

Course Appropriateness

Another challenge associated with Internet instruction is evaluating the appropriateness of courses selected for possible Internet delivery. Clearly, courses in which activities such as group work or oral reports are essential to the teaching/learning process or courses which require considerable demonstration on the part of the teacher may not be the best choices for Internet delivery. Problems regarding course appropriateness are likely to become more commonplace as schools at all levels offer more and more complete certificate, diploma, or degree programs online.

Copyright Issues

While maintaining copyright compliance has been an issue in education for some time, it has become even more important as schools post information on the Internet (Bockanic & Hogan, 1999). Staying within copyright guidelines for educational purposes is a must for all teachers regardless of the delivery method. However, courts have not yet determined what is fairuse of copyrighted material for educational purposes with Internet instruction. Therefore, it behooves teachers to follow a high standard of care when posting instructional materials on the Internet. One strategy for overcoming this challenge may be to password protect the course web site so that only students enrolled in the course will have access to the course material.

Summary

As the 21st Century begins, business educators at all levels will need to embrace the opportunities and challenges associated with Internet instruction as a viable tool in the teaching/learning process. The first step is to develop a thorough understanding of the opportunities and challenges of Internet instruction. Internet instruction provides both teachers and students with a number of opportunities including increased flexibility, class interaction, access, online resources, and ease of updating established course web sites. The most commonly reported challenges of Internet instruction are student access to technology, reliance on student initiative, student assessment, course development time, course appropriateness, and copyright issues. As more Internet courses are offered, both teachers and students will smooth out the rough spots currently associated with Internet instruction. However, business educators exploring the use of the Internet instruction must always evaluate its opportunities and challenges as an instructional delivery method in a specific context.

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Generating Realistic Business Data Instantly: A Database Files Generator

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Abstract

The purpose of this study was to create a business data generating application to help teachers generate realistic business data in great volume for teaching/learning activities. Realistic business data simulates the complexity of a real business in which students can learn to solve ill-structured business problems and to fully realize the computer's functionality and computing power. The application was also designed to allow teachers to manipulate parameters so that the teachers can "shape" the data to create problem situations for problem-solving activities. Instructors who are interested in using the application in their classrooms may send an e-mail to cchen@bsu.edu for a free copy of the application.

Introduction

Educators are charged to prepare students for today's complex and competitive businesses. Students need to be able to manage, control, and effectively use information for problem solving and decision making (Gregson, 1994; SCANS, 1991). However, instruction in problem solving generally emphasizes well-structured problems with needed information and appropriate algorithms clearly presented (Frederiksen, 1984), and this approach may not prepare students to be able to solve problems outside of academic settings (Hiebert et al., 1996; Sternberg, 1985). To solve the ill-structured type of problems faced in life, individuals must search for relevant information to identify the problem, formulate hypotheses, ask for additional information, and revise hypotheses until a solution is proposed (Jaušovec, 1994; Thomas & Litowitz, 1986). To prepare students to solve ill-structured business problems, therefore, educators need realistic, complex business data to provide simulated business information systems in which teachers can demonstrate and students can learn business problem solving and decision making.

The Business Data Generator

Based on the database design theory presented in *Designing Quality Databases with IDEF1X Information Models* (Bruce, 1992), a database model was developed for generating business data (Figure 1). In addition, general business principles were built into this data generator to generate realistic business data. For example, the transaction table contains large numbers of records; customers purchase higher quantity of lower price items per order; customers do not order the same products more than once on the same day; more expensive items take more days for the vendor to deliver; etc.

The Application and Data Structure

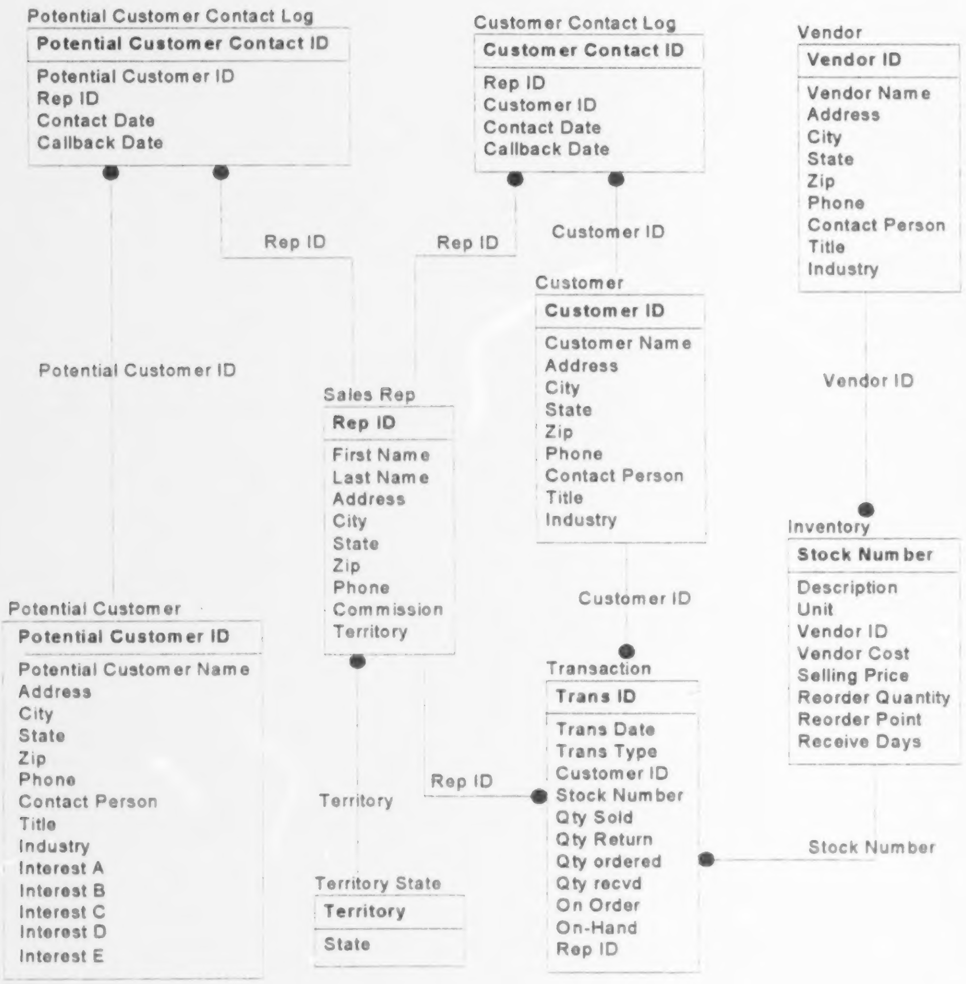
The installation of the application will create (1) an Access database file (Bits & Bytes) to provide the basic structure and necessary parameters for data generation, (2) the Business Data Generator application, and (3) an uninstall program. This generator creates data tables for computer-product related retailers.

Among the nine tables in the data structure model, the Bits and Bytes database file contains data in the following tables:

1. Inventory table has 312 computer-related inventory items. This table contains current (1999) pricing information obtained from an office supply catalog.
2. Sales Rep table has 6 records about sales representatives.
3. Territory State table consists of 47 states and the District of Columbia (DC), excluding AK, HI and WY. The generator draws customers and potential customers from a Company table, and the table contains no records for AK, HI, and WY. Each of the 48 state is assigned to a sales representative.
4. Vendor table has 29 vendor records. Currently, these vendors are computer-product related companies.

There are no records in the Customer, Potential Customer, Customer Contact Log, Potential Customer Contact Log, and Transaction tables. Data for these tables are generated according to the teacher's specifications. For generating records in these tables, the Bits & Bytes database file also contains the following information:

Figure 1
Databse Model


Potential Customer Contact Log
Potential Customer Contact ID
Potential Customer ID
Rep ID
Contact Date
Callback Date
Customer Contact Log
Customer Contact ID
Rep ID
Customer ID
Contact Date
Callback Date
Vendor
Vendor ID
Vendor Name
Address
City
State
Zip
Phone
Contact Person
Title
Industry
Rep ID
Rep ID
Customer ID
Customer
Customer ID
Customer Name
Address
City
State
Zip
Phone
Contact Person
Title
Industry
Potential Customer ID
Sales Rep
Rep ID
First Name
Last Name
Address
City
State
Zip
Phone
Commission
Territory
Vendor ID
Inventory
Stock Number
Description
Unit
Vendor ID
Vendor Cost
Selling Price
Reorder Quantity
Reorder Point
Receive Days
Customer ID
Potential Customer
Potential Customer ID
Potential Customer Name
Address
City
State
Zip
Phone
Contact Person
Title
Industry
Interest A
Interest B
Interest C
Interest D
Interest E
Transaction
Trans ID
Trans Date
Trans Type
Customer ID
Stock Number
Qty Sold
Qty Return
Qty ordered
Qty recvd
On Order
On-Hand
Rep ID
Rep ID
Territory
Stock Number
Territory State
Territory
State

1. Company table consists of 2,531 company names. This is the table that the application will randomly draw upon to generate customers and potential customers.

2. Inventory Matrix table consists of pre-defined parameters that the application uses to generate transaction records. Items in the Inventory table are categorized into 7 groups based on their prices: $1-50, $51-100, $101-1000, $1001-2000, $2001-3000, $3001-4000, $4001-5000. The inventory items in the lower price range groups will have higher vendor cost (i.e. lower profits), higher quantity sold in a transaction, higher reordering quantity, and lower reordering point because of fewer receiving days. These parameters are based on the assumptions that because of their lower prices, it is more likely that customers will buy more at one time, and, therefore, the retail company needs to reorder them with higher quantity. It also takes fewer days for vendors to deliver because the vendors would more likely have them in stock.

3. Data Param table stores the defaults that the application uses. For example, the starting date and ending date of the transaction table, the maximum and minimum numbers of records per day, etc.

4. Holiday table consists of holidays from 1996 to 2006; these holidays are downloaded from Microsoft Outlook. No transactions will be generated on these holidays.

5. Industry table has 197 industries. Currently, these are not used in generating data. The plan is that in later versions of this generator, teachers will be able to select an industry and generate data based on that industry.

6. Interest table consists of 48 items which are used to generate items that potential customers are interested in purchasing but the retailer is not currently carrying.

7. Receive Transaction table has no records. This table is used during the process of generating data.

Data Generation

When generating data, the Customer and Potential Customer tables need to be generated before generating other tables. Because the application randomly draws records from the Company table in Bits & Bytes, the total records in Customer and Potential Customer tables should not exceed 2531. The lists of customers and potential customers will be mutually exclusive (no customers will be in the potential customer table and vice versa).

After Customer and Potential Customer are generated, the teacher can generate Transaction, Customer Contact Log, and Potential Customer Log tables in any order.

The transaction table will have 3 types of transaction records: Sales, Purchase, and Receive. The teacher can specify the time period (starting date and ending date) and the maximum and minimum number of transactions per day. The application will start with the first day of the time period specified and randomly pick the number of transactions for the day according to the maximum and minimum numbers of transactions per day specified, and then it will generate a Sales record by

1. randomly selecting a customer from the Customer table,
2. randomly selecting an item from the Inventory table,
3. randomly generating the Quantity Sold according to the maximum quantity allowed per sale in the Inventory Matrix table of the Bits & Bytes database, and
4. subtracting the quantity sold from quantity on hand.

Then, the application repeats the process until the number of Sales records reaches the number of transactions for the day. No transactions will be generated on all holidays.

In generating Sales records, the program will monitor the on-hand value of each inventory item. If an on-hand value falls below reordering point, the program will insert a Purchase record based on the parameters in Inventory Matrix table of the Bits & Bytes. Meanwhile, the program keeps track of the Purchase record and will insert a Receive record days later, again, based on the parameters in Inventory Matrix table.

When generating Customer Contact Log and Potential Customer Contact Log tables, the program randomly selects customers and potential customers for sales representatives to contact. It also produces records on the days when the sales representatives should call back. The teacher can specify the maximum and minimum number of calls per day and the maximum and minimum number of days for call-backs.

Once all data are generated, there will be nine tables in the database file that students can use: Customer, Customer Contact Log, Inventory, Potential Customer, Potential Customer Contact Log, Sales Rep, Territory State, Transaction, and Vendor as illustrated in Figure 1.

With specifications of 6-month time period and a minimum of 20 and a maximum of 100 transactions per day, Business Data Generator generates approximately 16,000 records for the Transaction table in minutes.

Parameter Manipulation

There are two ways in which the teacher can 'shape' the data in certain ways and create 'problem situations' for problem-solving activities.

(A) Manipulating Inventory Matrix Table

To allow the teacher to have some control on the data generated, the application also generates a configuration database file for the teacher to modify and regenerate all or some tables. This database file has _config in the name. Some of the parameters that the teacher can change are in the Inventory Matrix of the _config file. It is not recommended, however, to modify any table in the Bits & Bytes database since it is the basis of the whole structure. Currently, the following Inventory Matrix table is used in generating Transaction table.

1. Vendor Cost Percentage is the percentage used to calculate the vendor cost. For example, for an item with $50 selling price, the cost is 82 % of $50, which is $41.

2. Max Order is the maximum quantity the application will generate per Sales record.

3. Reorder Quantity Percentage is the percentage over Max Order that will be used in generating a Purchase record. For example, the reorder quantity of an item with 20 in the Max Order field is 250% of 20, which is 50. When the application inserts a purchase record for this group of items, the purchase quantity will be 50.

4. Reorder Point Percentage is the percentage over Max Order that will be used to decide when to insert a purchase transaction. For example, for an item with 20 in the Max Order field, the application will insert a purchase record when the on-hand value falls below 25 (125% of 20).

5. Receive Days is the number of days it will take to receive an order. For example, two days after reordering (Purchase) a $50 item, a Receive record will be inserted and the on-hand value will be updated. If the receive date falls on a holiday, it will be received the next day.

Table 1
Inventory Matrix

Min Price	Max Price	Vendor Cost Percentage	Max Order	Reorder Quantity Percentage	Reorder Point Percentage	Receive Days
$1.00	$50.00	82	20	250	125	2
$51.00	$100.00	80	15	250	125	4
$101.00	$1,000.00	78	12	250	125	6
$1,001.00	$2,000.00	76	9	250	12	58
$2,001.00	$3,000.00	74	7	200	150	10
$3,001.00	$4,000.00	72	5	200	150	12
$4,001.00	$5,000.00	70	3	200	150	14

By manipulating these parameters, the teacher can, to some degree, 'shape' how often Purchase and Receive records will be inserted. This feature is also very helpful for advanced inventory control students to experiment and analyze the effects of various reordering point and reordering quantity.

Once the parameters in _config are modified, the teacher can update and regenerate some or all tables in the database file. In this case, the program will use the parameters in the _config database instead of those in Bits & Bytes. Specific steps to use the application and update parameters are listed in the Instruction section.

(B) Reassigning States to Sales Representatives

Another way to reshape the data and create 'problem situations' is to reassign states to different sales representatives. For example, currently sales representative 103 has states with fewer companies in the Company table (MT, ND, SD, ID...). Regardless of the number of customers and potential customers the teacher specifies, sales representative 103 will always have much lower sales and fewer customers, potential customers, and contacts. Reassigning states with more companies to sales representative 103 will increase the number of customers and potential customers she has; in turn, she will have more sales. Therefore, by reassigning states to different sales representatives, the teacher can create problem situations concerning sales representatives' performance.

To create performance situations, the teacher will need to (1) generate a student database file, (2) reassign states in the Territory State table of the student database file (not the one with a _config in its name, and (3) regenerate the Transaction, Customer Contact Log, and Potential Customer Contact Log tables. Specific steps are listed in the Instruction section.

The following table lists the number of companies in each of the 47 states and the District of Columbia (DC) in the Company table from which customers and potential customers are drawn.

Table 2
Number of Companies

AL	9	FL	69	LA	15	MT	1	NY	210	TN	26
AR	25	GA	58	MA	123	NC	45	OH	120	TX	173
AZ	19	IA	23	MD	33	ND	1	OK	27	UT	14
CA	346	ID	13	ME	7	NE1	3	OR	22	VA	65
CO	34	IL	169	MI	77	NH	10	PA	155	VT	5
CT	118	IN	43	MN	76	NJ	96	RI	8	WA	46
DC	18	KS	14	MO	59	NM	9	SC	14	WI	50
DE	16	KY	28	MS	2	NV	6	SD	1	WV	11

Summary

The Business Data Generator was created to provide teachers with a tool to generate realistic, large volume of data quickly and easily for teaching/learning activities. With simulated business database files, teachers can better prepare students to manage the volume of real business data and to solve the ill-structured business problems they will encounter upon graduation.

Business Data Generator Instructions

Table 3

System Requirements to Run Business Data Generator (©).

Operating System Platform:	Microsoft Windows 95 or later operating system or Microsoft Windows NT operating system version 4.0 (with latest service packs)
Memory Requirements:	8MB minimum (above Microsoft Windows minimum memory requirements)
Disk Space:	7 MB for application, additional space needed for any generated databases
Database:	Microsoft Access 97 or later

NOTE: Copyright registration pending. Distribution of this application is prohibited.

Installation:

There are two steps to the installation process: (1) unzipping the Data Gen.exe file and (2) installing the application. It is recommended that two new file folders (subdirectories) are created for these two steps before starting in order to keep files separated and avoid confusion.

After new folders are created,

1. Double-click the Data Gen.exe file and extract files to one of the two new folders. This one-time only unzip process will create 14 files.
2. Once you have unzipped the files, go to the folder with those 14 files and double-click the Setup (Application) file. Use the other new folders to store the new files that this step of the installation process will create: (1) Bits & Bytes database to provide basic structure and needed parameters, (2) the Business Data Generator application, and (3) an Uninst.isu file, which will be used in the process of uninstalling the application.

After the installation is complete, you will mainly work with the Business Data Generator application to create and update database files.

Generating Database files:

1. Double-click the application Business Data Generator. A license agreement screen will appear for 10 seconds.
2. Click New from the File Menu when you are in the data generator window.
3. Provide a database name and then Save the file. It will take a few seconds to create the new database structures for the student and the teacher databases.
4. Because of the application algorithm, the Customer and Potential Customer tables need to be created first. Click Customer and Potential Customer from the Insert menu. Provide the numbers needed and then click OK. Once the tables are generated, the pointer returns to the main screen.
5. Now you may insert records for the rest of the tables in any order. Provide the needed information and click OK to generate these tables. When generating Customer Contact Log and Potential Customer Contact Log tables, the application will randomly determine whether to have a call-back date and generate call-back records on those days if the "Track Callback" box is checked.
6. After you finished inserting all tables, close the application. It will take a few seconds. Do not open the databases while the application is still running. Once the application is closed, you will have two databases created; the one with the filename you have provided is for students, and the one with _config in its name is the teacher file.

Manipulating Inventory Matrix table:

1. Open the TEACHER database (the one with _config in its name) in Microsoft Access and change the parameters in the Inventory Matrix table. For example, raising the Reorder Point Percentage will raise the reorder point, and the software will insert a Purchase record sooner.
2. Close the teacher database file and then run the Business Data Generator application.
3. Click Open from the File menu (DO NOT create a new database) to open the existing STUDENT (the one without _config in its name) database file.
4. Click Inventory from the Update menu. Answer Yes when the "Update Inventory table with Inventory Matrix information?" It will take a few seconds to update the parameters, and then the pointer returns.
5. Reinsert the Transaction from the Insert menu. Answer Yes when the application displays the prompt "Delete existing transactions?"
6. Since the rest of the tables are not affected by parameters in the Inventory Matrix table, there is no need to reinsert records in the rest of the tables unless you wish to.

Reassigning States to Sales Representatives:

1. Open the STUDENT database (the one without _config in its name) in Microsoft Access and reassign states to sales representatives. For example, changing the Territory number for NY from 1 to 3 will reassign the NY State to sales representative 103.

2. Close the student database file and then run the Business Data Generator application.

3. Click Open from the File menu (DO NOT create a new database) to open the STUDENT database file.

4. Reinsert the Transactions table by clicking Transaction from the Insert menu. Answer Yes when the application displays the prompt "Delete existing transactions?"

5. Reinsert Customer Contact Log and Potential Customer Contact Log tables. Since there are no Rep ID fields in Customer and Potential Customer tables, there is no need to reinsert records in those two tables.

If you have to abort the application or if the power to the computer is cut off while it's generating data, delete all Access database files (leave only Bits & Bytes, Business Data Generator, and Unist) and rerun the application.

Uninstallation:

If you decide to remove the application from the disk, be sure to uninstall the program.

1. Click the Windows Start button.

2. Click Settings, Control Panel, Add/Remove Programs, and the Install/Uninstall tab.

3. Click Business Data Generator, and then click Add/Remove to remove the application completely from the hard disk.

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Increasing Organizational Productivity Through the Implementation of Virtual Teams

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Abstract

Since organizations are concerned with increasing the productivity of staff and at the same time offering flexible work arrangements, some organizations are implementing virtual teams. Virtual teams are goal-directed work groups that do not routinely have face-to-face meetings and communicate with other team members electronically. Information concerning the implementation of virtual teams in several organizations is presented.

Introduction

Recent developments in information and communication technology are creating opportunities for a new workplace that will be unrestrained by geography, time, and organizational boundaries. (Townsend,, DeMarie, & Hendrickson, 1998; Lipnack and Stamps, 1997). These resent developments are coming at a time when organizations are downsizing or restructuring, attempting to increase worker productivity, experiencing pressure from workers for flexible work arrangements, and experiencing increased global competition. Some organizations are meeting these challenges by outsourcing some organizational functions and replacing traditional structures with an interorganizational network or virtual organization, including work groups called virtual teams.

Virtual teams are defined as small groups of people working across boundaries supported by computer and other communication technologies (Townsend, et al.; Lipnack). These teams are goal-directed and do not routinely have face-to-face meetings. Approximately 52 percent of companies with more than 5,000 employees are using virtual teams (DeLisser, 1999).

Types of Virtual Teams

According to Dwarte and Synder (1999), seven basic types of virtual teams exist in organizations. The seven basic types are networked teams, parallel teams, project or product-development teams, work or production teams, service teams, management teams, and action teams.

A networked virtual team consists of individuals who collaborate to achieve a common goal or purpose. These teams frequently cross time, distance, and organizational boundaries. Team members rotate on and off the team as their expertise is needed. Team members may not even be aware of all the individuals in the networked virtual team.

Parallel teams virtual teams carry out special assignments, tasks, or functions that the regular organizations does not want or is not equipped to perform. A parallel team is different from a networked team because it has a distinct membership that identifies it from the rest of the organization. Parallel team members typically work together on a short-team basis to make recommendations for improvements in organizational processes or to address specific business issues.

Project or product-development-teams typically work on projects for users or customers for a specific time period. The difference between a project team and a parallel team is that a project team usually exists for a longer time period and has a charter to make decisions or recommendations. Project team members may move on and off the project as their expertise is needed.

Work or production teams perform regular and ongoing work and membership is frequently based on their functional job. Membership on the team is clearly defined and can be distinguished from other parts of the organization.

Service teams provide support across distance and time. Service may be provided locally or globally.

Management teams consist of members who work collaboratively but are dispersed geographically. Members of this type of virtual team almost never cross organizational boundaries.

Action team members typically cross organizational boundaries and are designed to offer immediate responses, often to emergency situations.

The teams identified by Dwarte and Synder (1999) have common goals across different types of organizations; however, organizations frequently call the teams by organization-specific names.

Creating an Organizational Culture for Virtual Team Success

For virtual teams to succeed, the leadership of the organization must value teamwork, communication, learning, and diversity. Duarte and Snyder(1999) state that managers and virtual team leaders at all levels must be open to change and must support virtual teamwork. They note four categories of leadership behaviors that encourage virtual team performance include communicating, establishing expectations, allocating resources, and modeling desired behavior.

Managers must communicate to organizational members that working across time and distance is not just a temporary fad but a new way of doing business, one that leverages knowledge and skills and capitalizes on diversity. Virtual teams should be assigned high-visibility tasks and projects to gain credibility in the organization.

Clear expectation about virtual team work should be established. Procedures and goals must be clear, so that virtual team members understand team objectives. Team work-related procedures should also be established.

The allocation of resources for virtual teams send signals to others in the organization that virtual teams are important. Time and money must be allocated for training for virtual team members in areas such as cross-cultural understanding, project management, and technology. Resources also must be dedicated to acquiring and maintaining the technology needed to facilitate the team's work.

Effective leaders must model the behaviors they expect. For example, leaders must work with other managers across geographic and cultural boundaries. They must solicit team members' input and demonstrate trust in their judgment.

Technologies Used with Virtual Teams

Virtual teams are possible in organizations because of recent advances in computer and communications technology. According to Townsend (1998) broad categories of technology include desktop videoconferencing systems, collaborative software systems, and Internet/Intranet systems. Since most companies have an e-mail system, most employees have access to this type system. E-mail is the most common and well-understood computer-mediated technology for distance collaboration. (Dwarte, 1999, 41) E-mail also provides users with a permanent, written record of the discussion.

Trust and Virtual Team Performance

Although implementation of current technologies is important for virtual team success, the development of trust among team members has been identified as very important for virtual team performance. Handy (1994) notes that trust is one of the foundations for performance in a virtual setting. He suggests that if we do not find ways to build trust and understand how technology affects trust, people will feel as if they are always in a very precarious state. The fact that virtual team members might be outside what is considered to be our informal radius of trust, the immediate work group, makes the tasks of developing and maintaining trust even more critical for performance. To encourage the development of trust among team members, Katy Boos, cofounder of Big Sky Communications Inc., a high-tech communications firm based in Silicon Valley, recommends physically bringing the virtual team members together at the start of a virtual team assignment. (McGarvey, 1997).

Conclusion

Using teams that do not routinely have face-to-face meetings has been made possible by recent developments in information and communication technology. Although the technology has paved the way for this type of teamwork, pressure for increased worker productivity, globalizations, and demands from workers for greater flexibility has fueled the increase in use of virtual teams. The successful implementation of virtual teams in an organization places demands on company leaders to establish an organizational culture that encourages virtual team success. Organizations must find ways to help virtual team members establish a climate of trust on their virtual team.

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Teaching Business Problem Solving with Database Management Application

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Abstract

Computers are used in post-secondary schools to teach students the use of applications software and to provide students a tool for learning subject-matter concepts. The objectives are to prepare students to be independent computer users who are capable of using the application to solve new, real-life problems. The purpose of the presentation is to recommend instructional procedures to prepare students to be independent computer users and to demonstrate how database applications can be used in teaching business subjects with problem-solving activities.

Introduction

Problem-solving and decision making skills have been identified as some of the most important skills for individuals to possess to be both employable and be able to function efficiently in this information-based society (Breivik, 1998; Morrison & Morrison, 1989; SCAN, 1991). Meanwhile, educators and researchers continue to criticize schools for not preparing students to solve the ill-structured types of problems faced in life (Brown, Collins, & DuGuid, 1989; Hiebert et al., 1996; Sternberg, 1985).

The vehicle of the information age, the computer, has been making an impact on education and instruction. Computers are widely used in, particularly, post-secondary schools to (a) teach students the use of applications software and (b) provide students a tool to learn subject-matter concepts. In the case of teaching students the use of applications software, the goal is to prepare students to be independent users of the software as a tool to accomplish tasks. However, a preliminary examination of the data gathered from an experimental study on business problem solving revealed that students cannot use Microsoft Access independently to solve problems. Some students indicated that following the step-by-step instructions in the textbook did not prepare them to apply what they have learned in solving a new problem. The same findings were reported with students using dBASE III to solve ill-structured business problem (Chen, 1995). To reform curriculum and instruction, Hiebert and his colleagues maintained that "rather than mastering skills and applying them, students should be engaged in resolving problems" (p. 12). By analyzing problems and formulating strategies, students are integrating their conceptual knowledge with their procedural skills (Hiebert et al., 1996).

In the case of using computers as tools to teach subject-matter concepts, researchers reported that using computers as tools in cognitive processes enhanced students' learning business concepts (Lambrecht, 1993; Rollins & Miller, 1988). It was also reported that computers provided an organizational and memory tool to help students modify and improve their own strategies in solving problems (Steinberg, Baskin, & Hofer, 1986).

Brown, Collins, and DuGuid (1989) argued that to develop students' true understanding of a subject, learning activities should be "authentic" by providing ordinary practices in the context of the subject matter. They also argued that "people who use tools actively rather than just acquire them... build an increasingly rich implicit understanding of the world in which they use the tools and of the tools themselves" (p. 33). Applying these arguments to teaching business subjects, it seems that computers should be used as problem-solving tools with realistic business data to develop and enhance students' understanding of the subject.

Purpose

The purpose of this presentation is to recommend instructional procedures to prepare students to be independent computer users and to demonstrate how database applications can be used in teaching business subjects with problem-solving activities.

Recommended Procedures

Teaching students the use of application software as compared to using computers as a tool for students to learn subject matter focus on different aspects of using the computer. Each view may result in a course with different prerequisite and different student populations. This section recommends various stages and instructional procedures to be used in these two types of courses.

Computer Application Classes

Generally, computer application classes assume no prior knowledge of using the software; students may have little or no experience using the software. In this type of classes, instructors need to start the instructions covering the basic operations of the application and then move on to more advanced stages.

Initial stage. Initial instructions need to be specific and detail oriented to guide students through the navigation and the use of basic functions. The very commonly used step-by-step instructions with computer screen displays serve well at this stage of instructions. However, students become dependent very quickly if the instructions do not move beyond the hand-hold type of activities. When selecting materials for this stage of instructions, teachers need to provide the context in which computer functions will be used. With this context, the operations of the computers become meaningful and relevant.

Dependent-user stage. Gradually, the instructions should introduce students to simple problem-solving activities with some guidelines and steps to solve the problem, but step-by-step instructions should be eliminated. For example, instead of telling students to "click Query tab, click New, add inventory table...." to guide the activity, the instructions should provide major steps such as "create a query to calculate sales from the inventory and transaction tables". With less detailed instructions, students will need to stop and think about the procedures needed to accomplish the task. As in the initial stage of instructions, well-structured problem-solving activities should reside in a meaningful context. In addition, this is an appropriate stage to introduce problem solving and steps: (a) constructing an internal representation of the problem; (b) selecting a method for solving the problem; (c) implementing the method; (d) attempting another method, reformulating the problem, or terminating the attempt to solve the problem; and (e) selecting another method if new subproblems emerged (Newell & Simon, 1972). Solving well-structured problems with guidance and problem-solving steps explicitly explained, students can develop general strategies that will be reinforced in the next stage.

Independent-user stage. To develop students to be independent application users, learning activities need to be structured in a way that students can explore, analyze, and experiment with various computer functionalities. Derived from suggestions made by Hiebert et al. (1986) and Brown, Collins, and DuGuid (1989), ill-structured problems with realistic business data sets will enable students to develop true understanding of the tool and to integrate conceptual and procedural knowledge.

Teaching Business Subject Matters with Database Applications

When using computers in teaching business subjects, the focus is on the subject matter; therefore, the class content may be based upon the assumption that students are somewhat familiar with the application used.

Initial stage. To prevent frustration and confusion, instructions in this type of class should start with the dependent-user stage described above to refresh or remedy students' application skills. Supplemental materials or instructions may be needed to bring those students who are not familiar with the application up-to-date. Since the subject matter is the focus, teachers should emphasize the business situation (context) and business concepts using many business problems to illustrate from simple to complex.

Dependent-User Stage Database Activities and Assignments. Typical activities work well. These include instructor discussion/demonstration followed by student performance of the tasks and reinforced with exercises requiring the same tasks. Database examples would include designing tables, queries, forms, and reports. Even at this stage, however, care should be taken to choose exercises that provide progressively fewer step-by-step instructions. Such progressions could lead to changing a table's design properties, designing queries that extract records meeting specified conditions and produce calculated fields, and reports that sort and group information in various ways. Depending upon the level of the class and the time provided for database instruction, instruction at the dependent-user stage may include more advanced query, forms, and report designs. Carefully incorporate business processes for which databases are useful. Students must learn that databases hold information for businesses and that they can be manipulated to provide information for business decision making and problem solving.

Once various business concepts ate introduced and database applications as tools are illustrated, the teacher can move to providing students with ill-structured business problems to allow students to experiment and formulate their own problem-solving strategies. Experimentation encourages analysis. For example, if students can manipulate and experiment with different reordering points and reordering quantities in an inventory control class, they can then analyze and learn the cause and effect of different decisions made. By "allowing students to problematize the subject" (Hiebert et al., 1996, p.12), the instructions provide the environment in which students are active learners, engaged in resolving problems, and developing meaningful, useful procedural knowledge.

Independent-User Stage Database Activities and Assignments. Assuming that students have completed structured exercises in the dependent-user stage to perform database software tasks, this stage of their development must move to ill-structured decision making and problem solving. To accomplish this and to further reinforce the students' concepts of databases as business tools, several guidelines should be followed when developing activities and assignments.

1. Databases should contain multiple tables with various relationships, and the table content should go beyond the typical "people information" content (names, addresses, social security numbers). Records involving products, transactions, events, and projects provide realistic representation of the information accumulated in businesses.

2. Some databases used by students should be large. Fifteen-to-twenty-record tables are not typical of business databases. Tables with hundreds (even thousands) of records are more realistic.

3. Problems should contain no instructions about procedure. Students should be able to examine the database contents and perceive how that information could be used to make a decision or solve a problem.

Example of problems for this stage would include one- or two-paragraph descriptions of the problem.

> Juan Allison, the Marketing Manager, is disturbed about Louis Woject's performance as a Sales Representative. Is his concern justified? Is there evidence that Woject's performance is indeed substandard? Document Woject's performance and provide your interpretation.

Problems such as this are recommended with the assumption that students have access to a database that contains tables documenting events, transactions, and conditions that would permit such interpretation. Notice that it says nothing about queries to design, reports to create, or calculations to use in solving the problem. Students, working either individually or in teams, would decide which database components to use to solve the problem.

Summary

The need to prepare students to use computers independently and the teaching approaches now possible by using computers prompt us, as teachers, to reexamine instructional strategies. In this presentation, the presenters will discuss instructional procedures that will help students become independent in using computer applications and will demonstrate business problem solving with the use of realistic, large business data sets.

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PART III
RESEARCH TRAINING PAPERS

Documenting a Research Article: Implementing the Author-Date System Contained Within the *Publication Manual of the American Psychological Association*

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Abstract

What do you know about using the author-date documentation system described in the *Publication Manual of the American Psychological Association?* Complete the self-check exercise to test your understanding. Then read the exercise answers, explanations, and examples to add to your knowledge base. By being careful about the details of the documentation aspects of your scholarly research and writing, you can enhance your professional reputation.

The Introduction

What do you really know about using the author-date documentation system described in the fourth edition of the *Publication Manual of the American Psychological Association* (American Psychological Association [APA], 1994)? Do you have beginner, intermediate, or advanced knowledge about the documentation system that is used by many respected social-science publications, including *The Delta Pi Epsilon Journal*?

The Self-Check Exercise

Complete the self-check exercise found in Figure 1; then compare your answers with the information found in the following paragraphs. The paragraphs indicate the correct answers for the self-check items, provide coordinated explanations, tell where in the *Publication Manual of the American Psychological Association* (APA, 1994) you will find additional information about that aspect of documentation, and provide examples wherever they are relevant.

Figure 1
A Self-Check Exercise About the Author-Date Documentation System

Read each of the following statements carefully before deciding if it is a true statement or a false statement. A statement is true if all of its component parts are true according to the fourth edition of the *Publication Manual of the American Psychological Association* (APA, 1994). A statement is false if any of its component parts is false according to the fourth edition of the *Publication Manual of the American Psychological Association.* Record a T if the statement is true in the left margin adjacent to the statement; record an F if the statement is false in the left margin adjacent to the statement.

1. The current edition of the *Publication Manual of the American Psychological Association* (APA, 1994) encourages authors to consider print sources and electronic sources as equals from a documentation standpoint.

2. Borrowed ideas that are not part of general knowledge, whether presented in paraphrased or verbatim form, must be acknowledged through appropriate documentation in the manuscript text and the related reference list.

3. The fourth edition of the *Publication Manual of the American Psychological Association* (APA, 1994) encourages writers to provide author, date, and page-number information in the case of a paraphrase from a print source or paragraph-number information in the case of a paraphrase from an electronic source when having this information would facilitate locating the material in either a lengthy or a complicated work.

4. While authors can embed the author and date information in the lead-in statement that introduces a quotation or within the parentheses that incorporate the page-number or paragraph-number information, they should place at least the page-number or paragraph-number information inside of parentheses after the quoted material to which it relates.

5. Since the date information in the first citation of a work carries through to other citations of the same work throughout the manuscript text, the date needs to be cited only once in the text of a manuscript.

6. When paraphrased or quoted information relates to one entire paragraph, writers should place the components of the in-text reference at the end of the paragraph and inside of the final punctuation mark if the paragraph is paraphrased

or if the direct quotation has fewer than 40 words but outside of the final punctuation mark if the direct quotation has 40 or more words, in which case the direct quotation has a block indention from the left margin of five to seven standard spaces and is keyboarded without the customary quotation marks.

7. The abbreviation *et al.* is correct only in a subsequent in-text reference to a work that has three or more authors.

8. The word *and* should be used to join the final two last names of multiple authors in the manuscript text if those names occur in an in-text reference that is outside of parentheses.

9. When works of the same author(s) with identical publication dates are cited, writers should place lower-case suffixes beginning with the letter *a* immediately after the dates with the suffixes assigned alphabetically based on the first major word in the titles of the works as they appear in the related reference list.

10. If the name of an author is an entity with a long or cumbersome name and if the abbreviation of that name is well known or quickly comprehensible, then writers should use the full name of the entity in the first in-text citation with the abbreviated form in brackets unless that entity name is inside of parentheses; the abbreviation for the entity is then used in all following in-text citations.

11. When constructing in-text reference citations, writers should cite the first two or three words of the reference-list citation, which would typically be the title of the work, if that work has no identifiable author.

12. While writers should order citations for multiple works by different authors within the same set of parentheses in alphabetical order, they can interrupt the alphabetical order to separate the major citations from the minor citations provided they use an expression such as see also, which is preceded by a semicolon, and the minor citations are alphabetically ordered just as the major citations are.

13. Personal communications, such as private conversations, letters, memoranda, and some forms of electronic communication, are cited in both the manuscript text and the related reference list because they are legitimate sources of information.

14. Citations appearing in a reference list are arranged alphabetically by first indexing unit, which is typically the first author's last name, the first main word in the name of the entity in the case of a group author, or the first main word in the title of the work in the case of no known author.

15. If there is no known author for a work, the date-block information begins the reference-list citation.

16. The date block of a reference citation always consists of the year of publication only.

17. Writers should underline or italicize titles of such works as those published in periodicals and proceedings, those obtained from dissertation and theses abstracts, those unpublished as symposium contributions, single episodes of television series, and music recordings when constructing reference-list citations.

18. In the publication-details block of a newspaper reference-list citation, writers should typically capitalize the name of the newspaper with initial capitals on major words including such articles as *The* if they begin the official newspaper name and follow the name of the newspaper with a comma, all of which has a continuous underline or is italicized, and conclude with the page number(s) preceded by *p.* if there is only one page and *pp.* if there are two or more pages.

19. In the publication-details block of a book reference-list citation, writers should typically include the name of the city of publication followed by a comma and the zip code abbreviation for the state or the name of the foreign country written out in full unless the city is well known for publishing, all of which is followed by a colon, and the name of the publishing company with initial capitals on major words.

20. The fourth edition of the *Publication Manual of the American Psychological Association* (APA, 1994) provides writers with very limited information about how to reference electronic sources of information since such information sources are relatively new and since no widely accepted standards exist for how they should be documented.

The Self-Check Exercise Answers

Each of the self-check exercise items is discussed in one of the following subsections of this part of the article.

Item Number 1

The correct answer to item number 1 is false. The *Publication Manual of the American Psychological Association* (APA, 1994) encourages authors to use traditional print sources that are widely accessible and retrievable whenever it is feasible to do so. This preference gives authors credit for their works that are readily available to others. When the fourth edition of the *Publication Manual of the American Psychological Association* was being prepared in the early 1990s, electronic sources were only beginning to emerge and were not widely accessible. Further, the absence of widely accepted standard forms for referencing electronic sources likely contributed to the preference for traditional print sources and resulted in electronic sources receiving only minimal coverage in the fourth edition (APA, 1994, pp. 97-98, 173-174, 218).

Item Number 2

The correct answer to item number 2 is true. Regardless of whether writers paraphrase or quote verbatim borrowed ideas that are not part of general knowledge, they must acknowledge their information source(s) through appropriate documentation in the manuscript text and the related reference list. Personal communication is appropriately acknowledged in the manuscript text but not in the related reference list because it cannot be retrieved by others. Writers are encouraged to use verbatim quotations only when the original wording is so effective that it cannot be improved; in other circumstances writers are encouraged to use paraphrases that capture the essence but not the exact wording of the information source(s). If writers use lengthy quotations from copyrighted works in their own works that they intend to publish, then they must take three special actions: (a) they must determine if they must obtain permission from the copyright owner to quote the material; (b) they must get any needed permission to quote the material from the copyright owner; and (c) they must acknowledge through an appropriate footnote that permission was given by the copyright owner to quote the material (APA, 1994, pp. 95, 97-99).

Item Number 3

The correct answer to item number 3 is true. In spite of the fact that most authors do not do so, the fourth edition of the *Publication Manual of the American Psychological Association* (APA, 1994) encourages writers using paraphrases from lengthy or complicated works to provide not only the required author and date information but also the optional page-number or paragraph-number information for print and electronic sources. Writers are required to provide author, date, and page-number or paragraph-number information for all direct quotations from print and electronic sources (APA, 1994, pp. 97-98).

Example:

(In the manuscript text)

According to the 1997 *Britannica Book of the Year*, there are 228,770,000 mother-tongue or native English speakers in the United States population of 265,283,783 (Calhoun, 1997, pp. 739, 776, 780), making about 86 % of the United States population native English speakers and about 14 % of the United States population nonnative English speakers.

Item Number 4

The correct answer to item number 4 is true. Writers have flexibility where they place the author and date information but not the page-number or paragraph-number information for direct quotations. The author and date information can go in either the lead-in statement that introduces the verbatim quotation or the parentheses that contain the page-number or paragraph-number information after the direct quotation. However, the page-number or paragraph number information should follow the direct quotation to which it relates (APA, 1994, pp. 95-98).

Examples:

(In the manuscript text)

According to Crystal (1995), English is the dominant or official language of more than 60 countries" (p. 106).

or

English is the dominant or official language of more than 60 countries" (Crystal, 1995, p. 106).

Item Number 5

The correct answer to item number 5 is false. The date from the first citation of a work will carry through only to the other citations of that same work in the same paragraph. In each and every following paragraph where that same work is cited, writers must include both the author information and the date information the first time that work is cited in the paragraph (APA, 1994, pp. 168-169).

Examples:

(In the manuscript text)

Williams (1974) argued that scales supplied by researchers constrained the responses of subjects. Williams also argued that scales supplied by researchers were not necessarily understood by nonnative English speakers.

(In a following paragraph in the manuscript text)

Given concerns expressed by Williams (1974), a group of nonnative English speakers was used to help devise and label the scales.

Item Number 6

The correct answer to item number 6 is true. Writers should place the documentation for paraphrased or quoted information that relates to one entire paragraph at the end of the paragraph and inside of the final punctuation mark if the information is paraphrased or if the direct quotation has fewer than 40 words but outside of the final punctuation mark if the direct quotation has 40 or more words. A direct quotation with 40 or more words has a block indention of five to seven standard—not proportional—spaces from the left margin and is presented without quotation marks. Its distinctive layout makes it instantly recognizable as a direct quotation; consequently, the customary quotation marks are omitted (APA, 1994, pp. 95-98, 245).

Examples:

(In the manuscript text)

"Businesspersons are beginning to wonder if some accents might be more acceptable than others when communicating with customers worldwide" (Scott, Green, & Rosewarne, 1997, p. 156).

> The literature investigation also showed that some linguisticians have conducted related studies, which provided a variety of possible research models often using the matched-guise technique and selected demographic characteristics. Few of these studies involved either a range of varieties of one language or native and nonnative English speakers. (Scott, Green, & Rosewarne, 1997, p. 157)

Item Number 7

The correct answer to item number 7 is false. The use of *et al.*, which means *and others*, is correct in either of two circumstances: in the second and subsequent in-text references to a work that has three, four, or five authors, in which case only the first author's last name precedes the *et al.*, or in the first and all subsequent in-text references to a work that has six or more authors, in which case only the first author's last name precedes the *et al.* Writers must remember to provide the initials and last names of all authors in the related reference-list citations, however (APA, 1994, pp. 168-169).

Examples:

(In the manuscript text)

A study was conducted by Chiba, Matsura, and Yamamoto (1995). Chiba *et al.* included some Japanese international business students in their sample.

(In the References section)

Chiba, R., Matsura, H., & Yamamoto, A. (1995). Japanese attitudes toward English accents. *World Englishes, 14*(1), 77-86.

Item Number 8

The correct answer to item number 8 is true. Writers should place an *and* between the final two last names of authors of a work when they appear directly in the manuscript text and outside of parentheses. Writers should use an ampersand (&) between the final two last names of authors of a work when they appear within parentheses, tables, captions, and reference lists (APA, 1994, p. 170).

Examples:

(In the manuscript text)

Colback and Maconochie (1989) reported that English is widely regarded as the dominant language of business around the world.

or

English is widely regarded as the dominant language of business around the world (Colback & Maconochie, 1989).

Item Number 9

The correct answer to item number 9 is true. Writers should identify works with exactly the same authors and dates by placing lower-case suffixes beginning with the letter *a* immediately after the date with no intervening space. The suffixes are assigned alphabetically based on the first major word in the titles of the works as they appear in the related reference list (APA, 1994, p. 172).

Examples:

(In the manuscript text)

Giles (1971a; 1971b) conducted several studies about native English speakers' reactions to a variety of British English accents.

(In the References section)

Giles, H. (1971a). Patterns of evaluation [in reactions] to R. P., South Welsh and Somerset accented speech. *British Journal of Social and Clinical Psychology, 10*, 280-281.

Giles, H. (1971b). Teachers' attitudes towards accent usage and change. *Educational Review, 24*, 11-25.

Item Number 10

The correct answer to item number 10 is false. When an entity is the author of a work and its entity name is long or cumbersome and when the abbreviation for the entity name is well known or quickly comprehensible, writers should use the entire entity name as the author in the first citation with the abbreviated form in parentheses when the entity name appears outside of parentheses and in brackets when the entity name appears inside of parentheses. Writers can then use the abbreviation for the entity name as the author in all following in-text citations. When the entity name is brief or when the abbreviation of the entity name is not quickly comprehensible, then writers should not use an author abbreviation in an in-text citation (APA, 1994, p. 170).

Examples:

(In the manuscript text)

The most current information about the author-date documentation system is contained within the fourth edition of the *Publi-*

cation Manual of the American Psychological Association (American Psychological Association [APA], 1994). The APA made a number of significant changes when it devised this edition.

or

In 1994 the American Psychological Association (APA) finalized the text for and published the fourth edition of the *Publication Manual of the American Psychological Association*. The APA made a number of significant changes when it devised this edition.

Item Number 11

The correct answer to item number 11 is true. If a work has no identifiable author, then writers should cite in the in-text reference the first two or three words of the reference-list citation. This would typically be the title of the work. Writers should place double quotation marks around the partial titles of articles and chapters but underlines beneath the partial titles of periodicals, brochures, and reports (APA, 1994, p. 171).

Example:

(In the manuscript text)

Estuary English is sweeping the United Kingdom like a tidal wave ("Everyday Basics," 1994).

(In the References section)

Everyday basics. (1994, April 24). *The [London] Sunday Times* [compact disk version], pp. 10, 26.

Item Number 12

The correct answer to item number 12 is true. Multiple works cited within the same set of parentheses in the text are arranged in alphabetical order based on the last names of the first authors of each of the works. Expressions such as *see also* are used to separate the major citations from the minor citations. When this occurs, a semicolon precedes the expression that separates the major and minor citations, and both groups of works are arranged alphabetically by the last names of the first authors of each of the works (APA, 1994, p. 172).

Example:

(In the manuscript text)

Researchers have consistently found that more prestigious English-language accents are rated more favorably than less prestigious English-language accents (Al-Kahtany, 1995; Rubin & Smith, 1990; see also Chiba *et al.*, 1995; Seggie, 1983).

Item Number 13

The correct answer to item number 13 is false. Personal communications do include such private communications as conversations, letters, memoranda, and some forms of electronic communication. These are legitimate sources of information that are cited in the manuscript text only. Writers should include in such in-text references the initial(s) and last name(s) of the source(s) of the personal communication in conventional order, the words *personal communication*, and the date the personal communication occurred. Sometimes the name(s) of the source(s) may appear before the other items, which are within the parentheses. However, personal communications do not appear in the related reference list because they are private communications that others cannot retrieve. The related reference list includes only sources of information that others can directly retrieve (APA, 1994, pp. 173-174).

Examples:

(In the manuscript text)

Estuary English represents nothing more than a gradual evolution of the speech patterns found in the London area (J. C. Wells, personal communication, January 12, 1994).

or

According to J. C. Wells, Estuary English represents nothing more than a gradual evolution of the speech patterns found in the London area (personal communication, January 12, 1994).

Item Number 14

The correct answer to item number 14 is true. Writers should arrange items in a reference list in alphabetical order by first indexing unit. The first indexing unit is typically the first author's last name, the first main word in the name of the entity in the case of a group serving as author, or the first main word in the title of the work in the case of no known author (APA, 1994, pp. 174-175, 178-180).

Examples:

(In the References section)

Accent on the acute. (1997, July 11). *[London] Financial Times*, p. 15.

Agheyisi, R., & Fishman, J. A. (1970). Language attitude studies: A brief survey of methodological approaches. *Anthropological Linguistics, 12*(5), 137-157.

American Psychological Association. (1994). *Publication Manual of the American Psychological Association*. Washington, DC: Author.

Item Number 15

The correct answer to item number 15 is false. Writers should move the information that would normally be in the title block, the title of the work, to the author block, where the author information typically goes, when a work has no known author. The remaining reference-citation information follows the date block, where the publication-date information goes. Each of these blocks of information ends with a period (APA, 1994, pp. 180, 182-183).

Example:

(In the References section)

British Council FAOs [frequently asked questions], English 2000 project: English F.A.O.s. (1996, September 26). (Available from The British Council, Medlock Street, Manchester M15 2AA, United Kingdom)

Item Number 16

The correct answer to item number 16 is false. Writers should record the date of publication, which is typically just the year, in the date block of a reference citation. However, if the reference citation is for such sources as a magazine, a newsletter, or a newspaper, writers must include the appropriate month, month and date, season, or other information that is necessary to differentiate that issue from all others during the year. This more specific date information follows the year and is preceded by a comma (APA, 1994, pp. 183-184).

Example:

(In the References section)

Colback, S., & Maconochie, M. (1989, October 29). . . . And the rise of the executive nomad. *The [London] Times Magazine*, 22-23, 25.

Item Number 17

The correct answer to item number 17 is false. Writers should not underline or italicize titles of such works as those published in periodicals and proceedings, those obtained from dissertation and theses abstracts, those unpublished as symposium contributions, single episodes of television series, and music recordings in reference list citations. Instead writers should capitalize the first word, the first word after a colon in the case of a two-part title, and any proper nouns in the titles of such works as those published in periodicals and proceedings, those obtained from dissertation and theses abstracts, those unpublished as symposium contributions, single episodes of television series, and music recordings in reference-list citations. Each of these titles ends with a period (APA, 1994, pp. 184-187, 194-217).

Example:

(In the References section)

Scott, J. C., Green, D. J., & Rosewarne, D. (1998). Nonnative United States-based business and technology students' perceptions about representative English-language accents. In *Proceedings, 1998 Delta Pi Epsilon Research Conference* (pp. 275-278). Little Rock, AR: Delta Pi Epsilon.

Item Number 18

The correct answer to item number 18 is true. When constructing the publication-details block of a reference-list newspaper citation, writers should capitalize the major words in the name of the newspaper including such articles as *The* if they begin the official newspaper name, place a comma after the name of the newspaper, all of which has a continuous underline or is italicized, and place the page number(s) preceded by *p.* if there is only one page and *pp.* if there are two or more pages. The page number(s) may be preceded or followed by section names or letters as necessary in order to locate and retrieve the newspaper article (APA, 1994, p. 197).

Example:

(In the References section)

Grimston, J. (1999, March 28). New towns talk in new accents. *The [London] Sunday Times*, p. 12 News.

Item Number 19

The correct answer to item number 19 is true. When constructing the publication-details block of a reference-list book citation, writers should typically include the name of the city of publication followed by a comma and the zip code abbreviation for the state or the name of the foreign country written out in full unless the city is well known for publishing (see page 176 of the *Publication Manual of the American Psychological Association* [APA, 1994]), all of which is followed by a colon, and the name of the publishing company with initial capitals on major words. When the author and the publishing company are the same, writers should list the name of the publishing company as *Author* (APA, 1994, pp.176,188, 201-207).

Examples:

(In the References section)

Crystal, D. (1995). *The Cambridge encyclopedia of the English language*. Cambridge, United Kingdom: Cambridge University Press.

Wakelin, M. F. (1972). *English dialects: An introduction*. London: Athlone Press.

Item Number 20

The correct answer to item number 20 is true. The fourth edition of the *Publication Manual of the American Psychological Association* (APA, 1994) provides writers with very limited information about how to reference electronic sources of information since such information sources are relatively new and since no widely accepted standards exist for how they should be documented. In the absence of detailed guidance in the *Publication Manual of the American Psychological Association*, writers may need to consult other sources, such as Li and Crane's (1996) *Electronic Styles: A Handbook for Citing Electronic Information* (2nd ed.) or Guffey's (1997) web site http://www.westwords.com/guffey/students.html.

The Conclusion

How accurately did you respond on the self-check exercise? Did you select all of the correct answers? If so, you likely are very knowledgeable about the documentation standards set forth in the fourth edition of the *Publication Manual of the American Psychological Association* (APA, 1994). If you did not select the correct answers on several items on the self-check exercise, then you need to add to your store of knowledge about the widely used author-date documentation system. By reading through the explanations and examples in the answer section of this article, you have already begun the process of adding to what you know about the author-date documentation system. Additional information about the author-date documentation system is contained within the pages of the *Publication Manual of the American Psychological Association*. You should carefully read all of its pages and study its illustrations. Since the author-date documentation system is complex, you should regularly refer to your copy of the *Publication Manual of the American Psychological Association* as you prepare a manuscript for *The Delta Pi Epsilon Journal* or for any other publication outlet that uses the author-date documentation system.

Your credibility as a researcher is on the line every time you make a documentation-related decision. By being careful about the details of the documentation aspects of your research manuscript, you can enhance the quality of your scholarly research and writing. If you have any doubt whatsoever about how you should document some aspect of your research and writing, you should consult an appropriate reference source such as the current edition of the Publication Manual of the American Psychological Association (APA, 1994). Remember that your professional reputation is at stake and that you want to do all that you can to retain and to enhance it. Knowledge is power. Make liberal use of your copy of the *Publication Manual of the American Psychological Association* every time you engage in scholarly writing.

References

American Psychological Association. (1994). *Publication manual of the American Psychological Association* (4th ed.). Washington, DC: Author.

Guffey, M. E. (1997). Formats for the citation of electronic sources in business writing. *Business Communication Quarterly, 60*(1), 59-76.

Li, X., & Crane, N. B. (1996). *Electronic styles: A handbook for citing electronic information* (2nd ed.). Medford, NJ: Information Today.

Illustrating a Research Article: Implementing the Graphical Specifications Contained Within the Publication Manual of the American Psychological Association

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Abstract

The purpose of this article is to highlight aspects of using graphical media in scholarly works as illustrated in the current edition of the *Publication Manual of the American Psychological Association* (American Psychological Association [APA], 1994), the publication style manual required for publication in The Delta Pi Epsilon Journal. It is designed as an introduction to or as a review of the principles of selection, development, and placement of tables and figures in the preparation of scholarly manuscripts for novice and experienced writers alike. Although this article focuses attention on many aspects of the graphical specifications of the *Publication Manual of the American Psychological Association*, it cannot replace a careful reading of the entire manual.

Introduction

The presentation of data in graphical form is an important element in producing quality scholarly presentations and publications when it is understood that the purpose of using such media is to enhance the audience's understanding of the message. As such, graphical media should complement rather than substitute for or replicate the manuscript text. When used appropriately, graphical media provide a means for illustrating complex technical information in an efficient and understandable way. In contrast, graphical media that are numerous, inaccurate, illogical, or poorly placed not only detract from the intended message but also may mislead the audience. By employing the principles of selection, development, and placement of tables and figures as illustrated in the fourth edition of the *Publication Manual of the American Psychological Association*, writers can effectively use a combination of textual descriptions and graphical media to enhance the understandability of complex technical information typically included in quality scholarly presentations.

Selection of Graphical Media

The *Publication Manual of the American Psychological Association* (APA, 1994) encourages writers to carefully consider which medium best presents the intended message clearly and economically. Therefore, selection of graphical media should begin in the design phase of the manuscript. Maintaining an appropriate balance of visual and verbal information should be an ongoing task throughout the writing and editing process.

The following questions may be useful in determining the best selection and use of graphical media when illustrating a research article.

1. What ideas, concepts, or findings need to be conveyed to the audience?

The results or findings section of a manuscript is used to summarize the data collected and the statistical treatment of them. Therefore, it is most likely that the majority of graphical illustrations will be included in this section. Writers should begin by identifying all the results or findings of the research including those that run counter to the hypotheses stated (APA, 1994, p. 15).

2. What amount and type of data does the audience need to understand the discussion of ideas, concepts, or findings?

Writers should determine how much detail of data is sufficient to justify their conclusions. Writers must also determine how the data should be summarized so that the statistical methods used and resulting numbers are readily intelligible. Individual scores or raw data should not be reported except in such studies that use single-case designs or for illustrative purposes (APA, 1994, p. 15)

3. Which of the data are crucial to the content, and which are peripherally related?

Because of the publication restraints of most scholarly journals and the associated costs of reproducing graphics, writers should reserve the primary pages of the manuscript for the most important information of the message. Peripherally related data might be presented in an appendix or even omitted entirely.

4. Which of the crucial data can be understood through the text only, and which will need supporting illustrations?

Generally, quantitative data are more easily comprehended and comparable when presented in tabular form; however, data in tables with two or fewer columns and rows may be more efficiently presented in the text only. In contrast, qualitative data that might typically be presented in text form may be more easily understood and efficiently presented in a word table. Likewise, an interaction, a patter of results, or a theoretical construct may be quickly recognized when conveyed as a chart, graph, drawing, or other figure as compared to a textual or tabular presentation (APA, 1994, pp. 120-121, 141).

Writers should continually strive for a balance between reader comprehension and publication efficiency when assessing data selection and presentation formats.

Design and Formatting of Graphical Media

Once the decisions are made concerning what data are to be presented in graphical form, thoughtful consideration should be given to designing table and figure formats that will be consistent throughout the publication.

Tables

Seven formatting components are typically used in the design of tables: an identifying number, a title, column headings and spanners, the body of data, notes, rulings, and spacing and page placement (APA, 1994, pp. 126-139). Pages 130-132 of the fourth edition of the *Publication Manual of the American Psychological Association* (APA, 1994) should be consulted for guidelines about presenting data in specific types of tables, including analysis of variance, regression, and path and linear structural relations tables.

Numbers. Table numbers are used to establish the relationship of the table to the text and provide the audience with sequencing and placement cues. Writers should number all tables with arabic numerals in the order in which the tables are first mentioned in the text. The word Table and its arabic numeral should be typed flush left at the top of the table. Tables of the appendices should be labeled with capital letters and arabic numerals (e.g., Table A1 is the first table of Appendix A; Table B2 is the second table of Appendix B). When typeset, the copyeditor and typesetter will attempt to place each table closest to where it is first mentioned in the text unless designated as a component of the appendices (APA, 1994, pp. 126, 253).

Titles. Table titles identify the overall purpose of the table. All titles should be concise, clear, and in parallel form. Titles should be flush left, typed using initial capital letters of principal words, and underlined. If the title is longer than one line, the lines should be double-spaced and subsequent lines should be placed flush left under the first line (APA, 1994, pp. 126-127, 253).

Column headings and spanners. Column headings and spanners establish the logic of data organization and the relationships between independent and dependent variables. The stub column (leftmost column of the table) usually lists the major independent variables. A column head is used to identify one column, while a column spanner is used to identify a group of columns. A table spanner provides further divisions within the table and can be used to combine two tables into one. All headings and spanners identify items vertically, not horizontally, and should be written in telegraphic and parallel form. Stubheads, column heads, and column spanners should be typed in singular form (e.g., condition or attribute) unless they refer to groups (e.g., children or adults). Table spanners may be singular or plural. Standard abbreviations and symbols (e.g., statistical terms) may be used without explanation; however, abbreviations of technical terms, group names, and the like must be explained in a table note. Sentence style capitalization is used for all headings, spanners, and word entries. All proper nouns should be typed with initial capital letters (APA, 1994, pp. 127-129).

Body. The body of the table contains the data. Numerical values should be expressed in the number of decimal places that the precision of measurement justifies. Rounded-off values may display patterns and exceptions more clearly than precise values. A good rule of thumb is to report summary statistics to two more digits than are in the raw data. Writers should report correlations, proportions, and inferential statistics such as t, F, and x2, to two decimal places. Percentages should be reported in whole numbers. All comparable values should be carried to the same number of decimal places, and the unit of measurement and the number of decimal places within a column must remain constant (APA, 1994, pp. 104).

Empty cells that cannot be filled because data are not applicable should be left blank. In cells that cannot be filled because data were not obtained or are not being reported, writers should insert a dash and provide a table note explaining the use of the dash (APA, 1994, p. 129).

Notes. Notes to a table are used to qualify, explain, or provide additional information relating to the table. Notes should be placed in the following sequence: general, specific, and probability. Each note begins flush left on a new line below the table and is double-spaced (APA, 1994, 136-139, 164, 254).

General notes are designated by the word Note (underlined) followed by a period. A general note relates to the table as a whole and ends with an explanation of abbreviations, symbols, and the like (APA, 1994, p. 136).

Specific notes refer to particular columns, rows, or entries and are indicated by superscript lowercase letters (a, b, c). Writers should order the superscripts horizontally from left to right across the table by rows, starting at the top left (APA, 1994, p. 136).

Probability notes indicate the results of tests of significance. Asterisks indicate those values for which the null hypothesis is rejected, with the probability (p value) specified in the probability note (APA, 1994, p. 137).

Rulings. Table rulings bring clarity and order to the table when used sparingly and appropriately. Horizontal rules are used to separate the table body from the column heads and table notes. Long, uninterrupted columns of numbers or words may also be separated by rules; however, appropriately positioned white space often provides an effective substitute for rules. Vertical rules are rarely if ever used in APA-style journals. As a result, boxed tables should not be submitted to The Delta Pi Epsilon Journal and other APA-style journals. (APA, 1994, pp. 139, 254)

Spacing and page placement. Regardless of length, all tables should be double-spaced and begin on separate pages. If a table is longer than a manuscript page, writers should type *(table continues)* at the bottom right-hand corner of the page. Column heads should be repeated on the second and subsequent pages. It is also acceptable to turn a table sideways on a page. However, writers should not single-space or reduce the type size. Most APA-style journals will accommodate a 60-space table placed vertically on a page and a 125-space table placed horizontally on a page. Table width can be determined by counting the characters in the widest entry in each column and allowing 3 characters for spaces between columns (APA, 1994, p. 139).

The table formats used in Tables 1 and 2 illustrate several differences in the visual presentation of data formatted in a non-conforming table (Table 1) and data that is appropriately formatted to APA-style table standards (Table 2). Writers should note the numerous differences in the formatting components of each table as well as the difference in overall readability of data in each table.

Table 1
Test Scores

TEST SCORES	MEANS		MEDIANS		RANGE	SD
Op. Sys.	4.2	46.7%	5.072	50.0%	9	2.0434
Word Proc.	4.915	49.0%	5.122	44.4%	10	2.2213
Spreadsheets	4.775	47.0%	4.563	50.0%	9	2.1221
Databases	3.788	41.1%	3.46	37.5%	6	1.8222

Note. This table does not conform to the graphical specifications contained within the fourth edition of the *Publication Manual of American Psychological Association.*

Table 2
Computer-Related Competencies: Objective Test Results

	Mean		Median		Range	SD
Test section	No. correct	%	No. correct	%	No. correct	%
Operating systems	4.20	47	5.07	50	9	2.03
Word processing	4.92	49	5.12	44	10	2.24
Spreadsheets	4.78	47	4.56	50	9	2.15
Databases	3.79	41	3.46	38	6	1.86

Note. This table conforms to the graphical specifications contained within the fourth edition of the *Publication Manual of American Psychological Association.*

Figures

Figures include charts, graphs, photographs, drawings, and all other types of illustrations other than tables. While tables generally provide exact information, figures typically require the audience to approximate values. This section provides general formatting standards used in the design of figures including identifying numbers, captions, legends, print-quality specifications, and submission requirements (APA, 1994, pp. 141-162). For information about the formatting details of specific types of figures, writers should refer to pages 142-149 of the fourth edition of the *Publication Manual of the American Psychological Association* (APA, 1994) since space constraints will not allow for the myriad of standards concerning various types of figures.

Numbers. Figure numbers are used to establish the relationship of the figure to the text and provide the reader with sequencing and placement cues. Writers should number all figures consecutively with arabic numerals in the order in which the figures are first mentioned in the text (APA, 1994, pp. 160-161, 254).

Captions. A figure caption serves as both an explanation of the figure and as a figure title. The figure caption should be brief yet descriptive and should be placed on the same line following the figure number. Captions should be typed in sentence style (APA, 1994, pp. 160-161, 254-255).

Legends. A legend explains the symbols used in the figure and is placed within the body of the figure; therefore, it should have the same type and size of lettering that appear in the rest of the figure (APA, 1994, pp. 160-161).

Print-quality specifications. Two types of printing processes are generally used to reproduce figures: line art processing and halftone processing. Line art is any material that will reproduce only in black and white and is the less expensive processing method, while half-tones are figures that have shades of gray, such as photographs, and are generally more expensive to reproduce (APA, 1994, p. 149).

Regardless of which type of processing is used, the readability of figures is largely dependent on the quality of the original prints submitted for publication. As such, all figures should be prepared according to the mechanical specifications concerning size and proportion, paper and ink or other drawing material quality, and shading and lettering of figures as described in section 3.80 of the fourth edition of the *Publication Manual of the American Psychological Association* (APA, 1994, pp. 149-157.)

Submission requirements. Final figures must be photographed and submitted as 8 x 10 in. (20 x 25 cm) glossy prints or submitted as final prints on bright white paper. Computer-generated figures should be on 8 1/2 x 11 in. (22 x 28 cm) high-quality, bright white paper or other material that produces a sharp image and high contrast. All figures should be identified on the back by figure number and short article title. TOP should be written on the back as well to show orientation. A list of all figure captions should be typed together on a separate page (APA, 1994, pp. 161-162).

Integrating Graphical Media into the Text

The final step in successfully illustrating a research article with graphical media is to provide a smooth transition from the text discussion to the presentation of data in graphical form. The following procedures highlight text referencing and placement guidelines as illustrated in the fourth edition of the *Publication Manual of the American Psychological Association* (APA, 1994).

1. All tables and figures should be introduced by number in the text in the first paragraph that the data is mentioned. Writers should use phrases such as "as shown in Table 1" or "(see Figure 2)"; however, phrases such as "the table above" or "the figure on page 12" should be avoided since actual placement will not be determined until the typesetting process (APA, 1994, pp. 15, 125).

2. Writers should inform the audience of the critical elements to look for in the table or figure and explain the importance of the finding(s). Simply repeating in the text each data point that is presented in the tables should be avoided (APA, 1994, pp. 15, 125).

3. Writers should also indicate where approximate placement of each table or figure should occur in the text by typing two two-inch horizontal lines with a phrase such as "Insert Table 1 Here" typed in between the lines. The copy editor and typesetter will determine actual placement of graphical media in the article. Therefore, it is not necessary to physically place graphical media in the manuscript text; instead all tables and figures should be placed at the end of the manuscript in numerical order. A complete listing of the order in which the manuscript components should be submitted can be found on page 240 of the fourth edition of the Publication Manual of the American Psychological Association (APA, 1994).

4. Finally, writers should verify that all tables and figures have been correctly numbered and labeled and that they match the listing of tables and figures in the preliminary pages of the manuscript. A review of the tables and figures checklist on page 344 of the fourth edition of the Publication Manual of the American Psychological Association (APA, 1994) can also assist writers in finalizing the manuscript for publication.

Summary

By conscientiously using the principles of selection, development, and placement of tables and figures as illustrated in the fourth edition of the *Publication Manual of the American Psychological Association*, writers can use graphical media to effectively illustrate complex technical information in scholarly presentations and publications. Writers should begin the selection process by determining what ideas, concepts, or findings are to be conveyed to the audience; what amount and type of data will support the discussion; which of the data are crucial to the content and which can be omitted; and which of the crucial data can be understood through text only, and which will need supporting illustrations. Once these decisions have been made, writers should carefully design each table and figure following the formatting specifications for tables and figures to ensure consistent formatting of graphical media throughout the manuscript. Finally, writers should follow the referencing and placement guidelines to provide smooth transitions from the text discussion to the presentation of the tables and figures.

Reference

American Psychological Association. (1994). *Publication manual of the American Psychological Association* (4th ed.). Washington, D.C.: Author.

Let's Get Serious About Conducting Action Research

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Abstract

Action research--generally research conducted in a classroom or in a clinical environment--usually addresses the "itch" that business educators want to scratch when considering answers to problems that address personal teaching issues as contrasted with theoretical or more global problems. As these teachers and trainers move through their graduate education, they're usually exposed to courses such as "research methods," or "research in education," or "statistics in research" or some such title. And, in general, this is where their research efforts end; however, the researchable problems don't end there; these problems too often remain unanswered and the "itch" remains unscratched.

This session addresses action research projects that can be undertaken by trainers and classroom and beginning teachers in "non-formal" environments and include topics such as: developing research question(s) and hypotheses, acquiring and analyzing data, and reporting the results. Emphasis is placed on developing **actual** and **practical** projects for beginning researchers.

Action vs. Formal Research

In the January 1990 issue of the *Business Education Forum*, NYU Professor Bridget N. O'Connor, the Editor of "Ask the Experts" column, asked Southwest Texas State University professors Robert J. Olney and James D. Bell, to respond to the issue concerning action research versus formal research. Their comments, reflective of solving school policy problems, indicated that, as one might guess, "it all depends" . . .on the decision's import, the impact of potential positive and negative consequences of the decision, and the time and resources available to conduct the research. They indicated that while both formal and action research paradigms share many of the same features, the former is the systematic, controlled, empirical, and critical investigation of phenomena that provides the ability to control, through design decisions, the research situation. The latter, on the other hand, is less formal, usually thought of as day-to-day problem analysis which, because of a lack of precise design, cannot always assure reliability and validity of results. (O'Connor 1990, p. 8) Olney and Bell went on to illustrate the seven common elements of both action and formal research by listing their similar points within the research process itself: (1) the observation phase; (2) the preliminary data gathering step; (3) the problem identification; (4) the research design; (5) the collection of data; (6) the analysis of these data and their interpretation; and the final step, (7) deduction, which includes conclusions drawn from the results of the findings. The authors concluded that the degree of the impact of both economic and human factors will dictate the "level" of formality to any research activity, moving from the most basic, action type of research to the more structured and formal research activity. (p. 9)

While one might discuss semantics and wording, Olney and Bell provide a framework within which all research activities occur. And it is within this framework that action research takes place. Here are the issues we will discuss and apply:

1. The introduction and setting of the problem(s) to be researched
2. The research question(s) to be addressed
3. The significance (meaningfulness) of the problem under study
4. The research design (experimental, survey variables, case study)
5. The literature appropriate to the problem
6. The hypotheses (educated guesses) to be examined or tested
7. The method to be employed-including
    a. population, sample, and unit of analysis
    b. instrumentation or datagathering devices
    c. method of collecting and treating data
    d. method of analysis--returning to the earlier hypotheses or questions posed
8. The statistics to be used and how to go about using them (SPSS for example)
9. Reporting the results
10. The Internet

The Introduction and Setting of the Problem

Perhaps the easiest problem to define and research is one we all face–the achievement of learners in our institutional setting–for it is this problem that is also the most difficult to assess formally. This, of course, should not deter you from investigating this problem **informally** by examining variables that might make a difference in your learners' achievement. What are some of these variables? You might examine the possible impact of time of day a course is offered; differences between ages or genders of your learners and their achievement; the nature of the text or instructional materials used; the impact of your participants' learning style, or even the teaching style of the instructor (are you McGregor's Theory X or Theory Y type? What about your students' style?).

Another problem worth investigating is the "status question." What is the current status of something in your field? What, for example, is the impact of the 150-hour requirement on accounting education; what do leaders in your discipline think about a current issue of importance; what differences may be evident between tenure and institutional levels within a specific subject area; or is certification uniform among post-secondary instructors and/or between corporate trainers. All of these questions–and more–may be considered via a survey approach.

Lastly, for this report, consider a non-statistical approach to a problem by investigating what activities occur in a learning situation. How do students work together in peer dyads or triads; what approaches are taken by an on-site "just-in-time" learner when faced with a specific task-oriented problem; or what are the results of a training intervention measured by a focus group discussion. Finally, what are the long-term effects of instruction on participant learning? All of these are critical factors in the corporate training setting.

The above are merely illustrations of problems that can be addressed on an application level, and they only scratch the surface of problems we face daily, all of which are worthy of investigations that we can undertake. The issue, of course, is to define the problem in such a way that we isolate the variables we wish to study. All too often the problem under consideration has so many variables that we want to look at them all, and by doing so, we may mask any effect of the critical variables on the outcome. This is further confounded by the fact that we generally have a limited number of participants in our investigation, thus minimizing the usefulness of statistics except for descriptive purposes.

The setting of the problem, likewise, is a wide-open field for most of us as we tend to operate within a classroom or instructional environment. If this is not so, the survey or observation/interview method may prove helpful. Of course, if you are involved in conducting an experiment concerning the achievement of your students or the effectiveness of a selected instructional method, it's critical to remove yourself–if at all possible–from the actual instructional environment. By doing so, you remove the potential for bias in the process as it's very difficult to control one's emotions and body language when we're involved in an actual experiment.

The Research Questions to be Addressed

Many investigations are guided by the research questions posed as a result of the problem defined, and this is a good idea for it focuses attention on what's really important in the research project. Research questions also confine the study to make it more manageable and, thus, more attractive since the project does not seem so overwhelming when you look at a few such research questions. What are some examples of research questions? Let's attach them to some of the aforementioned problem areas.

In a classroom or training experiment you might want to address questions such as, to what degree does variable X associate or relate to variable Y (to what degree is there a difference between gender and achievement–assuming achievement is measured by some valid standard such as a test or performance example). You can replace "gender" with any other variable(s) you wish to observe, such as tenure, age, education, etc. Another research question might be to what degree does the participant's learning style (as measured by some valid instrument such as Kolb or MBTI) relate to achievement. Or to what degree is there agreement between the learner's "management style" (such as McGregor's Theory X or Y) and achievement–or even this agreement and achievement as combined with your instructional style. As you can see, these research questions are phrased to yield a relationship and not just a simple "yes or no" response.

In survey research you might wish to investigate the relationships between independent variables such as personality type (locus of control or gender identity) with some selected demographic variables (age, gender, tenure, education) and the respondent's job satisfaction or decision style. Thus, some sample research questions might include, to what degree is there a relationship between the selected personality type and job satisfaction, selected personality type and selected demographics, and/or the combination of personality type and selected demographics on job satisfaction or decision style. You may also wish to determine the perceptions of leaders in your field relative to selected issues identified through your experience or the literature. Such examples might include research questions such as, to what degree is there agreement (among your sample) of critical issues such as membership, certification, or ethical values within the selected field. The options are almost limitless.

In observational or ethnographic qualitative research dealing with focus groups or observation of actual work practices, you might pose some of the following research questions: what types of time are spent on X activity; what interactions occur between groups when dealing with a selected problem; what processes occur when task-directed learning is practiced. As you can see, these research questions will not generally result in any statistical outcomes; however, your analysis of their interactive effects will be just as important to the analysis of your findings.

The Significance of the Study

For most formal research, the significance is traditionally measured statistically with wide generalizability; however, in action research, significance is measured more on the "meaningfulness" of the results than on the statistics. Because you will probably be constrained by the number of participants in an experimental study--where you attempt to control as many of the external variables as possible (a daunting task, indeed)--there will be insufficient numbers for any valid statistical treatment. Nevertheless, you will find either little, some, or no difference, which may be attributed to the treatment variable. Despite the "weight" of this difference, your question should be "is this finding **meaningful**?" Therein lies the crux of the "significance" of your study. In short, did it whatever "it" is, make a difference that was important and is one that you can use. That's really all that matters here.

The Research Design

In experimental and survey research, as well as to some degree in ethnographic or clinical studies, it is quite helpful to diagram the pieces, or variables and their interactions. In experimental research this design can be drawn in a number of ways depending on the sophistication of your study. For example, and from the simple to the more complex, consider the following, with the figure "X" referring to the intervention or treatment involved, and the figure "O" referring to the performance or test measure involved.

Single Group Post-hoc Experiment: X O

The treatment, X, is presented followed by some measurement of achievement to see if the treatment made any difference. This is a very simple design but does not measure achievement difference from the outset. The following design does this.

Single Group Pre-test, Post-test Experiment: O X O

The first observation, usually a pre-test, is identified by the first O, which is followed by the treatment, X. The second observation, the second O, determines the degree to which, if any, achievement occurred. If achievement did occur, and other variables were held constant, it can generally be assumed that the treatment made the difference. The weakness in this design is that you don't know the degree to which achievement occurred normally or because of the indicated treatment. The third design accounts for this.

Two Group Pre-test, Post-test Experiment: O X(a) O
O X(b) O

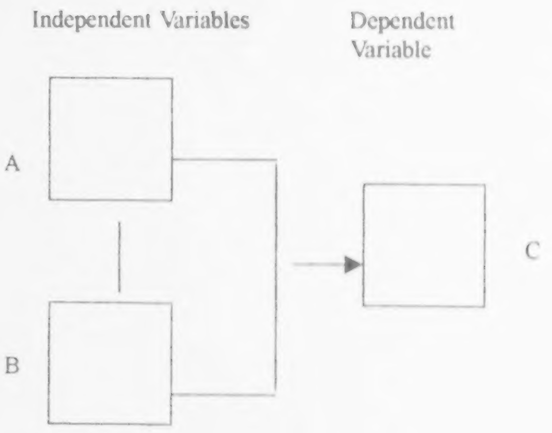
The same actions are performed as with the single group design; however, treatment (a) is considered the "traditional" treatment (class lecture/discussion, homework assignments, etc.) while the second treatment (b) is the "experimental" treatment. We generally call the first group the "control group" and the second group the "experimental group." Both groups receive the same pre-test and the same post-test so if there are any differences in outcomes/achievement, we can observe if the experimental treatment (b) was more effective than control group's treatment (a). Because there may be other variables that cannot be controlled and/or the outcome difference is not statistically robust owing to the small numbers involved, you must consider the "meaningfulness" of the difference. If you find a difference favoring the experimental treatment, you must ask yourself is it worth the effort involved to change procedures or processes in order to obtain the new results. In many cases, the answer will be "yes" and changes are worthwhile. In others, however, the answer may be "not really" and the retention of the traditional treatment should be continued. Even if there is no significant difference, the results mean you have another, equally-effective method in your instructional quiver.

There is another issue that should be considered, even if you cannot accomplish it, and that is the randomization of the members of both groups. If you must use intact classes---as with the case for most classroom research--then there may be an inherent difference between groups, possibly due to the time of day or the nature of scheduling or some other variable that might impact the results. Conducting such research in elementary accounting that involves a day class and an evening class, while similar in numbers and gender, would certainly reflect different groups if the day class was made up of traditional students and the evening class made up of employed people, attending part time. This is only one illustration supporting the use of randomizing the members of the groups where each individual has an equal opportunity to be in either the control or the experimental group–theoretically sound, but very difficult in practice.

This last design, through stronger than the foregoing, does not take into account the impact, if any, occasioned by the pre-test, which may have sensitized the participants to the post-test. The Solomon Four-group design takes this into account; however, for our purposes, having four equal groups is, for most individuals, quite impractical and will not be covered in this report.

Survey Designs

Survey research designs look quite different from experimental designs in that we look for "what are" interactions between variables and not experimental treatments, which try to determine "what could be." A typical survey design might take the following form:



The independent variables A and B--and there may be many others--indicate separate variables with A usually the more important variable. In the case where you wish to determine learning style or the individual's locus of control (either internal or external), this is where you would "set" this block. And since demographic information is generally also a part of survey research, B would cluster those elements under that category--which might include age, gender, tenure, education, income, etc. The C box is the dependent variable, or the outcome you wish to measure that is impacted by the independent variables. For example, if you are measuring the relationship of learning style on achievement in an accounting or computer course the survey would include an instrument that would measure learning style for box A, (Kolb, for example) and use either the final grade or results of a final exam for box C. Simple correlation would show the degree to which a specific learning style is reflected in higher (or lower) scores. Likewise, in box B, you would determine ages, gender, etc., and correlate them as well with the results in box C to ascertain whether these demographic variables had a significant impact on the outcome. A third combination would also be possible, and that is the correlation between the selected demographic variables with learning style to determine if there is any connection between these two independent variables. A final set would be to combine **both** independent variables and see to what degree they had an impact on the dependent variable.

While this may sound complex, it is not. One must think about the possible logical "connections" between variables that make sense to the researcher and place them in some type of order that makes comparisons reasonable. As with experimental research, survey research also strives to hold as many variables as constant as possible so that outcomes are not influenced or impacted by extraneous elements. And, because action research really strives to address your own problem of interest, the variables are left up to you!

The Literature Related to Your Research

What you already know about the problem has been most likely gained through your readings and your experiences. The literature–articles in journals and related publications, research results from your colleagues or associates via presentations at meetings or in proceedings–exist in abundance as you probably know. There is, however, a good reason to explore this literature in a bit more detail since what others have found could have a substantial impact on your own research. For example, another report may suggest a new instrument to measure one or more of your variables, one that is easier, less expensive, or shorter than the one you planned on using. The literature may also suggest a new type of computation that is more powerful or accounts for a gap in the process you planned to use. In short, what does the literature say about the critical parts of your research. For experimental designs, what is said about your population, size of sample, the treatment(s) you plan to use? For survey designs, what does the literature say about your variables and any connections that others may have studied? The literature review does not have to be lengthy or convoluted, and it does not have to involve hours upon hours in the library. It is very likely that you can access journals and articles, including the major newspapers, on the web. The Internet can also provide valuable literature reviews when using key words to search for studies similar to your own. One excellent resource is ProQuest at http://wwwlib.umi.com/dissertations/main. In short, you must be proactive and imaginative in your literature search, and you will be amazed at what you'll find to support and enrich your own study.

The Hypotheses to be Examined

A hypothesis is what I call an "educated guess." From the foregoing literature search you will unearth what others have found relative to your study. With this information, your research design, which poses the relationships between variables; your problem statement, which outlines the parameters of your study; and the research questions developed, you should now be able to pose some tentative hypotheses or educated guesses about what relationships you might find. These hypotheses are usually presented in one of two ways–either in the null form, which states that there is no significant differences between variables examined, either because there exists conflicting research results or because you simply don't know–or the directional form, which suggests that you have an educated hunch about what relationships you might find. Your research questions generally form the starting point here as each question can now be stated as a testable hypothesis. For example, if one of your research questions asks to what degree there might be a difference between males and females relative to achievement, your hypothesis might be stated, in the null form, as "there will be no significant difference in achievement relative to gender." If, on the other hand, you have support to suggest that females do better on the type of class involved, you can state your hypothesis in a directional manner, such as "there will be a significant difference between genders relative to achievement" (if you do not want to formally posit that women will do better) or "females will score significantly higher on achievement" (if you want to be more specific). The value of the former directional hypothesis is that if one sex **does** score higher you have not put yourself on the line to say which one. The value of the latter hypothesis is that you state firmly what you expect to find. When you do find what you've anticipated, great!; however, if things go counter to your expectations, be prepared to ask yourself why this might have happened (and there may be numerous reasons for this). Since you are stating your hypotheses in a testable manner, it will be easy to let your computer do the number crunching for you. This suggests, of course, that you are somewhat familiar with the statistical basics, which will enable you to select the appropriate test to use.

Hypotheses are supportable and testable hunches that flow from your research questions and, when examined, usually statistically, enable you to better address your research problem with some degree of support. There are many issues involved in developing hypotheses, some statistical and formal and others qualitative and informal. For action research, the objective is to come up with findings that you can be comfortable with and those with which you can report with confidence. In short, hypotheses are a "means to an end" and another piece in the action research process.

The Method

The method (not methodology, since 'ology' means the study of) is probably the most exciting part of your study and, unfortunately, one that usually drives the researcher to conduct the study. I say unfortunately as the method should flow from the problem, the research questions, the design, and the hypotheses. It is a natural outgrowth of these elements and not an activity all by itself, which in some cases, is the route taken to a dubious end.

The method generally includes the answers to the following questions:

1. What is the population to which I want to generalize my findings and what sample can be drawn from it; what is the unit of analysis?

2. What instruments should I consider to gather my data?

3. How should I go about collecting and treating my data?

4. What method of analysis will I use? What statistics (if any) will be involved?

In short, what data do I need? What sources of these data are available to me? How do I get these data? What do I do with these data once I have them? What analyses will lead me to respond to my original problem or resolve my research questions and hypotheses? The following paragraphs will briefly describe each of these four method elements.

The population is the larger audience that you hope will benefit from your research. While this is not always the case or the primary objective in action research, it's wise to keep your eye on the larger picture because what you find **may** have an impact on a wider audience. Remember, too, that each research activity adds to the body of knowledge, so in this regard think big!

The sample is drawn from your population, in most instances. With your class, however, you may want to use only your students as a "convenience sample" in that they are readily available as subjects. In survey research, however, you need to spend more time thinking about your population and how to obtain your sample. Will you use an association's list of members or acquire these names from publications such as *Fortune, Business Week, Business Education Forum, or Who's Who*? And keep in mind, too, that some publications and lists require permission prior to contacting individuals.

Another question that must be answered in conducting survey research is the one dealing with sample size. How many are enough? How many are too few? According to Wunsch (1986, pp . 31-34) you need to deal with two concerns: what is the size of the total population to which you want to generalize your findings (whatever they may be); and what degree of "confidence" do you want to reflect relative to the size of your sample? Do you want to be 95% confident that your sample size captures the total "picture" of your population? How about 99%? 90%? Using the traditional 95% figure and extrapolating this to a population of 3,000 to infinity, you should plan on having a minimum of 384 in your sample, more if a pilot test will be involved. Four hundred, of course, is a better "round number" and provides a bit of a cushion for those in your sample who may be unavailable. This number is often the "rule of thumb" used.

The size of this sample, however, implies that you'll get **all** of them to respond to your survey--a most unusual situation. Dillman (1978), in his Total Design Method system, suggests that if you follow his directions and recommendations for mailings and follow-ups, you should be able to capture a 50% return, or about 200 valid responses. A caution here is that the original 400 figure implies that you get everyone to respond, and if you only receive half of these, your confidence level will be reduced. And doubling your sample size to compensate for this (moving to 800 in order to get 400 with a 50% response) does **not** really work as you've only **increased** your confidence level at the outset! It is not unlike the football adage where a team is penalized "half the distance to the goal line" and continues to get penalized with "half the distance" with each successive penalty. You never reach the goal line, despite the number of penalties you incur. So while there is little you can do about it, you should keep this weakness in the back of your mind.

Let's now address the issue of a "convenience sample" with only a few subjects to be involved. How many **are** "too few" anyway? The usual rule of thumb is that for each variable involved, you should have a minimum of 15-20 subjects for statistical validity. For example, if you have three demographic, two independent, and one dependent variables, you should have a minimum of 90-120 in your sample. This number, of course, may not be possible so you may want to opt for "meaningfulness" rather than "statistical significance" for your study. In terms of intact classes, naturally, you will no doubt be constrained by numbers so you may want to reduce the numbers of variables–or make allowances for them by lowering your expectations somewhat.

Finally, you must decide what your unit of analysis will be. Will you use individual responses or class groups? Will your study compare institutions (business or education types) or identified clusters (gifted students, published authors, Broadway performers)? Group data will differ from individual data so you must identify your unit of analysis early.

The method of acquiring your data is also a major decision. If you are going to conduct a clinical, site-based classroom experiment, you may want to consider an observation checklist, which you'll have to develop. If you want to measure student achievement, you should be very careful to identify a valid and reliable test so that all responses are supportable. If you wish to conduct a survey and distribute questionnaires about personality type, such as locus of control, you will have to choose from a number of published instruments, which have proven both valid as well as reliable. Julian Rotter's locus of control concept, which measures individuals' introversion and extraversion, is one such public domain instrument. This public domain element is to be desired as you'll not have to request permission to use the instrument or pay a fee for this purpose. A fee-based instrument may, of course, have a greater degree of validity and/or reliability than one in the public domain; however, this is a trade off you'll have to make.

You can develop your own questionnaire of course; however, all of the rules of assessing validity and reliability occur. While these rules can be simple, they tend to increase in complexity as the degree of desired sophistication increases. Trade-offs are always involved, and there are number of excellent texts and publications available for guidance.

Fortunately there are tests available to measure almost anything you wish to examine. Two excellent references, which outline test details, their development and validity and reliability figures, as well as prices and contact organizations include the *Mental Measurements Yearbook*, a publication in its 13th edition, from the Buros Institute at the University of Nebraska, and the two volume set of *Tests in Print*, currently in its 4th edition, which is an index to tests, test reviews, and literature on specific tests, also out of the Buros Institute. In short, if you can find an appropriate instrument you shouldn't have to reinvent the wheel!

You will most likely have to develop your own demographic instrument to gather information you want to include as a piece of your independent variable package. First of all, determine what general information you need, such as age, gender, education, etc., and then create a format that will enable the respondent to answer each of these questions easily and unambiguously. Take age, for example. If you desire to record an exact age, it is better to ask for the year of birth rather than have the respondent write in their age. Likewise, if you want gender, ask your respondent to check off a box rather than write in a response, and the same goes for education or income. In these latter two instances, you will need to determine if precise information is to be desired or whether you can use clustered responses, such as high school graduate, some college, 4-year college graduate, etc.; for income, $10,000 or less, $10K - $25K, more than $25K, etc. You will probably get more usable data with clustered or group response categories than with write-in responses. Remember, the shorter and the easier your instrumentation is to complete, the greater the response rate you'll enjoy. Keep in mind, too, that you should not ask questions, the answers to which you do not plan to use! And if you are conducting your research within the confines of an educational institution, you'll probably have to obtain clearance from a "human subjects" committee, which insures that no harm will come to the clients/subjects involved. These as well as other ethical issues are also important to keep in mind.

Collecting Your Data

Once you have decided the instruments used to collect your data, it's time to consider just how this will be done. Let's look at an example of experimental classroom-based research first.

In an experiment you must **attempt** to control all of the extraneous variables that might have an impact on the results of your study. In the classroom illustration earlier, the treatment variable–the method of instruction–should be the only variable that is different for the class(es) involved. The distribution of a questionnaire at the outset of the class, allowing for late registrants and early dropouts, can be done easily by the instructor. Likewise, any other independent variable information can also be gathered at the same time. The dependent variabel--the outcome--must be very carefully controlled. The final exam score or total accumulated points in the class–or both–must be consistent for all groups involved. Thus, makeup exams should be given very careful thought as this may provide a potential for contamination should there be large numbers of students who take this extension. All such evaluations should be scored on a consistent basis, and the net score(s) should be used rather than converting them to letter grades, which must, of course, then be reconverted to numeric scores later for analysis. Letter grades also add another element of potential bias as they generally include impressions and "fudge factors" of individual instructor preference.

In a survey you will have to consider the distribution much more carefully as once the mailing has been conducted, it's difficult–if not impossible–to recapture or change the process unless you use another sample; a costly and time-consuming event. Once the instruments have been packaged–a completely assembled package rather than separate questionnaire instruments is to be desired–check to ensure that all of the pieces are in place and ready to mail. These pieces usually include the covering letter, which explains the nature of the study, why you are doing it and how and why the individual has been selected as a participant, as well as providing a guarantee of confidentiality to the respondent. The letter, which may be duplicated as page one of the packet and individually signed to personalize it, is followed by the most important part of your survey. This means that you should ask questions concerning your dependent variable first, followed by the next most important variable questions, and ending with your demographic questions. You should also provide an opportunity for the respondent to request the results of the survey–usually as group data–and the researcher's address and telephone number at the end of the packet. It is also desirable to code each packet with a number so you can keep track of those who have responded in order to send out follow-up packets at a later date. A stamped, self-addressed reply envelope should be provided for the return of the packet. Each survey follow-up packet should contain the same materials except that the covering letter, of course, should be revised to indicate the follow-up nature of the subsequent mailing. Two follow-up packets are generally sufficient to acquire your desired minimum of a 50% response. As you can see, survey research can be quite expensive so it is critical to select your sample with great care and follow up accordingly to achieve the greatest response possible. A pilot test mailing prior to the primary distribution, with a small number (15-30), drawn from your sample, can provide valuable experience as well as to give you an idea of the results, which you will obtain. This will also provide an idea of the return rate as well as any problems to be encountered.

Can you use the results from a survey response of less than 50%? This question is often posed with great trepidation; however, the answer is "yes" but with qualifications that you will announce in your final report. Of course a response of less than 25% will be very difficult to generalize to your wider audience as those that did not respond may have significantly-different positions relative to your primary questions, and this may, indeed, be the reason for their non-response (in)action.

Treating your Data

Continuing with your survey research, now that your instruments have been distributed and the results have overflowed your mailbox, what do you do with the stack of them on your desk? It's time to move forward on the treatment of your data, the plans for which should have been made as you created your design and developed your hypotheses. The Statistical Package for Social Science (SPSS) is probably the best software program for you to consider as it's fairly user-friendly with lots of options and a good help screen backup. There is also a wide array of SPSS literature; *A Simple Guide to SPSS for Windows, for Version 8.0* is current and quite helpful. Mac versions are also available.

It is strongly suggested that you experiment with this program with a small number of returns (your pilot, for example) in order to get the feel for data input as well as the manipulation of the variables for the various statistics you will use. The power of SPSS allows you to be very creative so early experimentation can have a substantial return on your practice investment. For qualitative research, programs such as The Ethnograph and NUD*IST, are also valuable tools with which to treat your data. For experimental research, much of the foregoing also applies with the treatment of your data, as you'll likely have pre- and post-test data as well as selected demographic information with which to work. Likewise, some early experimentation with SPSS will pay big dividends as you treat the results.

Method of Analysis

The method of analysis is frankly one of the easier tasks as you've already indicated what will be significant in the development of your research hypotheses. If your results reach a .05 level of significance or lower, you can claim "significance" and make conclusions and recommendations accordingly. Remember, too, that you should return to your original research questions to make sure that each of those were addressed in your findings. However, if you're looking for "meaningful" as opposed to "statistically significant," you will have to use more intuitive powers to come up with your conclusions and recommendations. Naturally, since you are more concerned about what works in your setting, these results don't have to be extended to a wider audience unless you think that others may gain from your findings.

Statistics to be Used

Statistics most useful to action research include, but are not limited to the use of t-tests, which measure the differences between means of two groups (achievement of two groups on a final exam, for example); analysis of variance (ANOVA), measures the differences between means of more than two groups; and correlation (Pearson r), which measures the degree to which two or more variables relate to each other. These are among the many statistical tests available, all of which appear within the SPSS program, some of which are very powerful and others, merely interesting. You do not have to be a statistical expert or versed in the formulas to use them; however, you do need to understand what your results show and what they mean. Don't be afraid to ask and experiment!

Reporting Your Findings

This aspect of action research is as important as are the results of formal research. What you find can be communicated to others, and this may be accomplished through faculty meetings, organizational presentations, and written reports submitted to local, regional, and national (or even international) associations. This may seem daunting at first; however, if you "begin at the beginning. . ." and describe what you've done–very similar to the foregoing format of this report–you will be surprised how involved you will get with your research report. By disseminating your findings and what it means to you in your setting, you may be surprised to see the impact on others who may be interested in similar research. Do not hide your results under a basket, but let others know what you've done and what you've found. It's been said that good research begets more research, and you'll find this is true. The biggest hurdle is, as with most activities, beginning the process!

Some of the publications you should consider include those found in the annual Delta Pi Epsilon *Business Education Index*. Of special import, however, are your local state and regional publications, most of which encourage submissions of action research projects. NBEA's *Business Education Forum* is also a prime vehicle for your research findings, and like most of the state and regional publications, accept short articles of 4-10 pages in length. While the DPE *Journal* accepts research articles of a somewhat more sophisticated nature, this publication too, might be considered as a vehicle for your action research report.

Using the Internet

Finally, more and more surveys are appearing on the Internet, and all the foregoing information and cautions apply in this instance as well. In fact, even more care should be taken with this medium since it is impossible to determine precisely who is responding to your survey, given the potential for anonymity and, of course, misuse. Internet surveys do have the advantage of attracting a wide audience at much reduced cost, which makes this an attractive consideration; however, it is well to consider the adage, "tread lightly on the waters of change."

Conclusion

Action research seeks to solve practical issues of concern to individual trainers and classroom teachers, and thusly, should be considered by all business educators. Conducting research is similar to learning to ride a bicycle in that you may begin tentatively and slowly; however, you will soon become more expert in the process. Like ripples in a pool, your research will serve to provide the examples that beget more research. Let's begin today!

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PART IV
WORK IN PROGRESS PAPERS

Delta Pi Epsilon Chapters

1936 ALPHA: New York University, New York, NY
1938 BETA: Oklahoma State University, Stillwater, OK
1940 GAMMA: Western Pennsylvania Chapter
1942 DELTA: University of Cincinnati, Cincinnati, OH
1942 EPSILON: Boston University, Boston, MA
1942 ZETA: University of North Carolina, Greensboro, NC
1945 THETA: Indiana University, Bloomington, IN
1946 KAPPA: University of Michigan, Ann Arbor, MI
1946 MU: University of Tennessee, Knoxville, TN
1947 NU: University of Kentucky, Lexington, KY
1947 OMICRON: University of Iowa, Iowa City, IA
1948 PI: Ball State University, Muncie, IN
1948 RHO: Ohio State University, Columbus, OH
1951 UPSILON: University of Mississippi, University, MS
1951 PHI: University of Minnesota, Minneapolis, MN
1953 OMEGA: George Peabody College for Teachers, Nashville, TN

1956 ALPHA GAMMA: University of Houston, Houston, TX
1957 ALPHA DELTA: Emporia State University, Emporia, KS
1958 ALPHA EPSILON: University of North Texas, Denton, TX
1958 ALPHA ZETA: Temple University, Philadelphia, PA
1963 ALPHA MU: State University of New York, Albany, NY
1963 ALPHA NU: University of North Dakota, Grand Forks, ND
1964 ALPHA XI: The City University of New York, New York, NY
1965 ALPHA PI: Wayne State University, Detroit, MI
1966 ALPHA RHO: California State University, Fresno, CA
1966 ALPHA SIGMA: Arizona State University, Tempe, AZ
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1966 ALPHA UPSILON: University of Nebraska, Lincoln, NE
1967 ALPHA PHI: Northern Illinois University, DeKalb, IL
1968 ALPHA CHI: Rider University, Lawrenceville, NJ
1969 ALPHA PSI: Mankato State University, Mankato, MN

1969 BETA BETA: Southern Illinois University at Edwardsville, Edwardsville, IL
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1971 BETA ETA: Bowling Green State University, Bowling Green, OH
1971 BETA THETA: University of Wisconsin-Whitewater, Whitewater, WI
1971 BETA IOTA: Illinois State University, Normal, IL
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1972 BETA MU: Central Connecticut State University, New Britain, CT
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1974 BETA PHI: Montclair State University, Upper Montclair, NJ
1975 BETA PSI: Eastern Illinois University, Charleston, IL
1975 BETA OMEGA: Louisiana Tech University, Ruston, LA

1975 GAMMA ALPHA: Eastern Michigan University, Ypsilanti, MI
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1979 GAMMA THETA: Arkansas State University, State Un, AR
1979 GAMMA IOTA: University of the District of Columbia,/Mount Vernon Campus, Washington, DC
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1992 GAMMA OMEGA: Southwest Missouri State University, Springfield, MO

1992 DELTA ALPHA: The Colorado Chapter
1994 DELTA BETA: Louisiana State University; Baton Rouge, LA
1994 DELTA GAMMA: Mississippi State University, Starkville, MS
1994 DELTA DELTA: State of Florida Chapter
1994 DELTA EPSILON: State of West Virginia Chapter
1994 DELTA ZETA: Northeast Ohio Chapter
1995 DELTA ETA: State of Wyoming Chapter
1995 DELTA THETA: New Hampshire College, Manchester, NH
1995 DELTA IOTA: Puerto Rico Chapter
1999 DELTA KAPPA: Southern California Chapter

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DELTA PI EPSILON, founded in 1936, is a national honorary professional graduate society for men and women devoted to the advancement and professionalization of business education. Through its ideals of scholarship, leadership, and cooperation, the Society strives to make significant and unique contibutions to professional growth and scholarly achievement in business education. In the words of its founder, Dr. Paul Lomax, can be seen the scope of the Society: "The professional interests of Delta Pi Epsilon encompass the whole of business education in relation to the entire fields of American business and American education. Its membership . . . must always think in terms of the common good and advancement of all our business teachers and of all students who pursue courses in business education."

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